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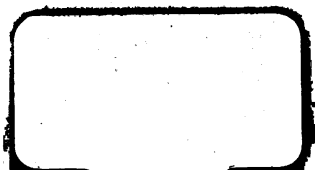
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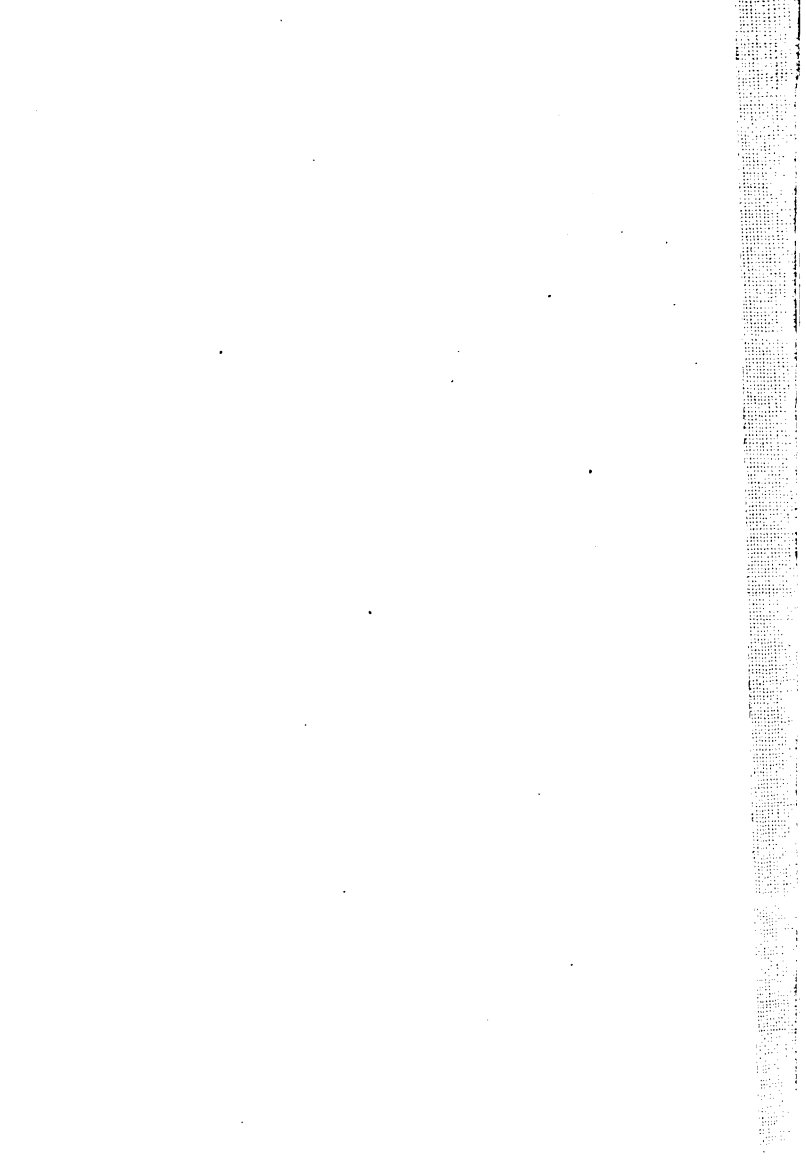
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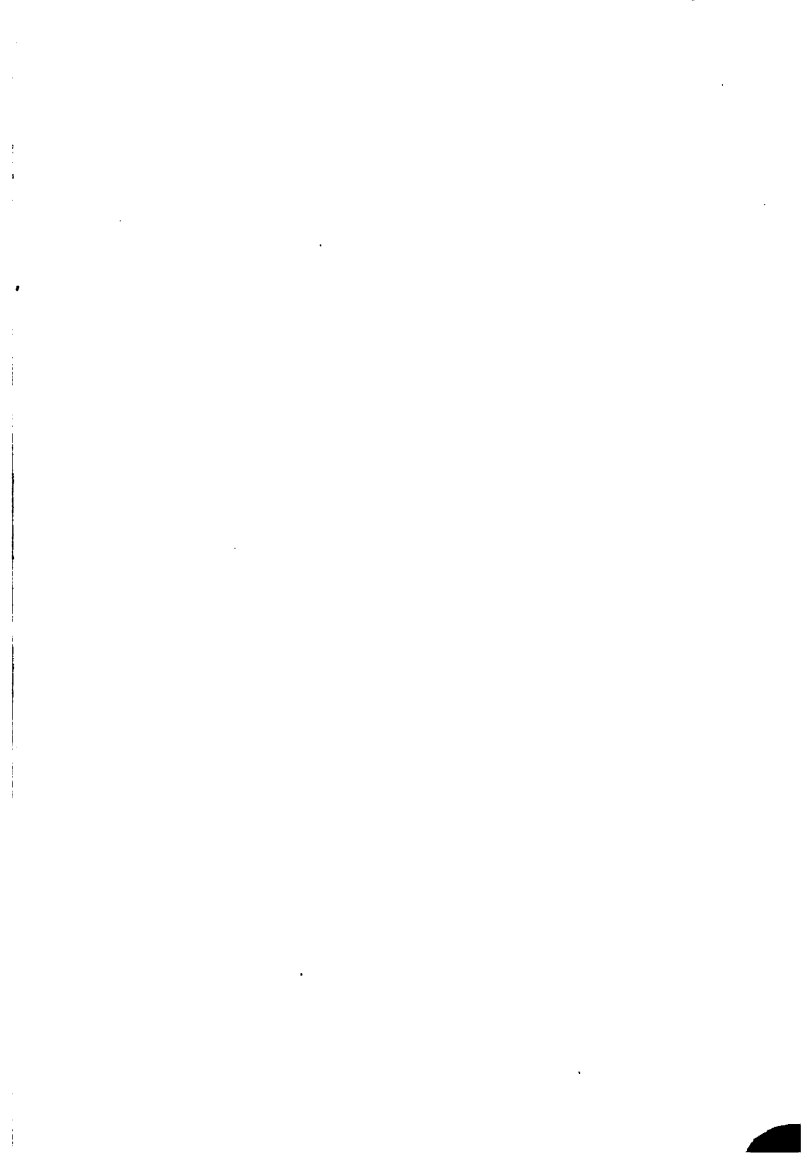


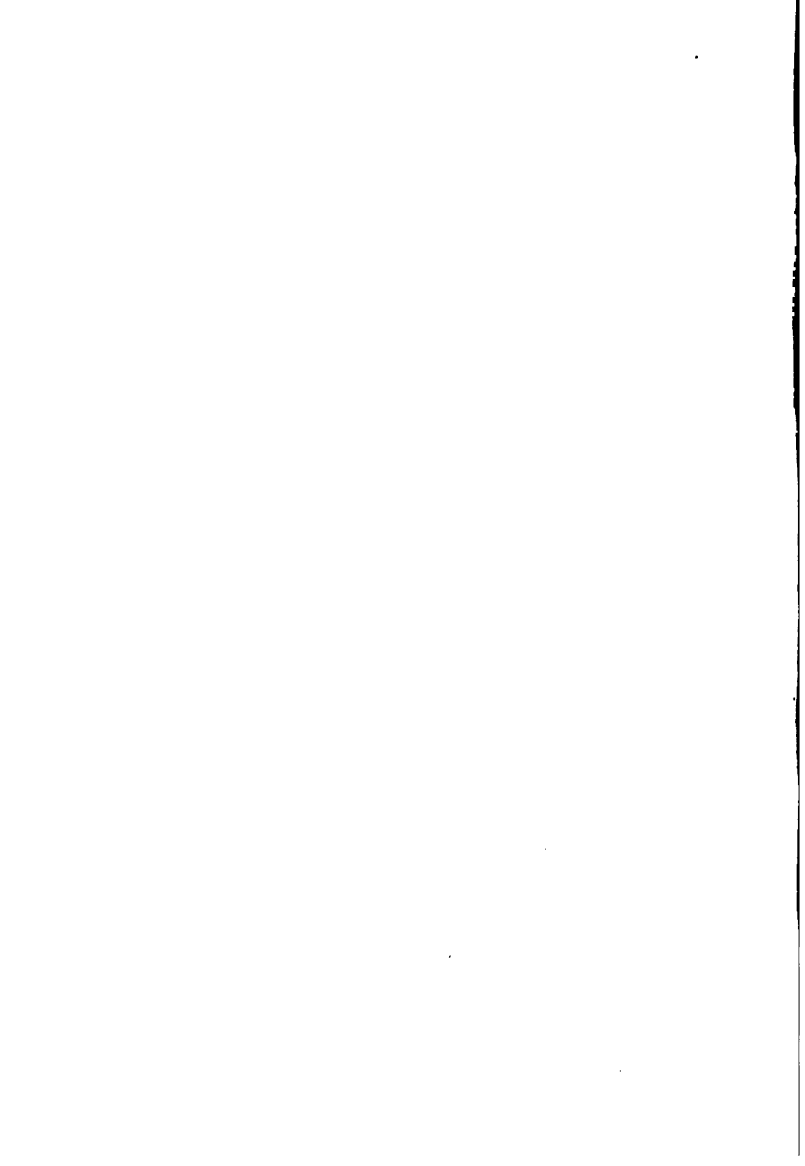
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ARISTOTLE

Illustrated Cameos of Literature

Edited by George Brandes

Small Crown 8vo

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ARISTOTLE

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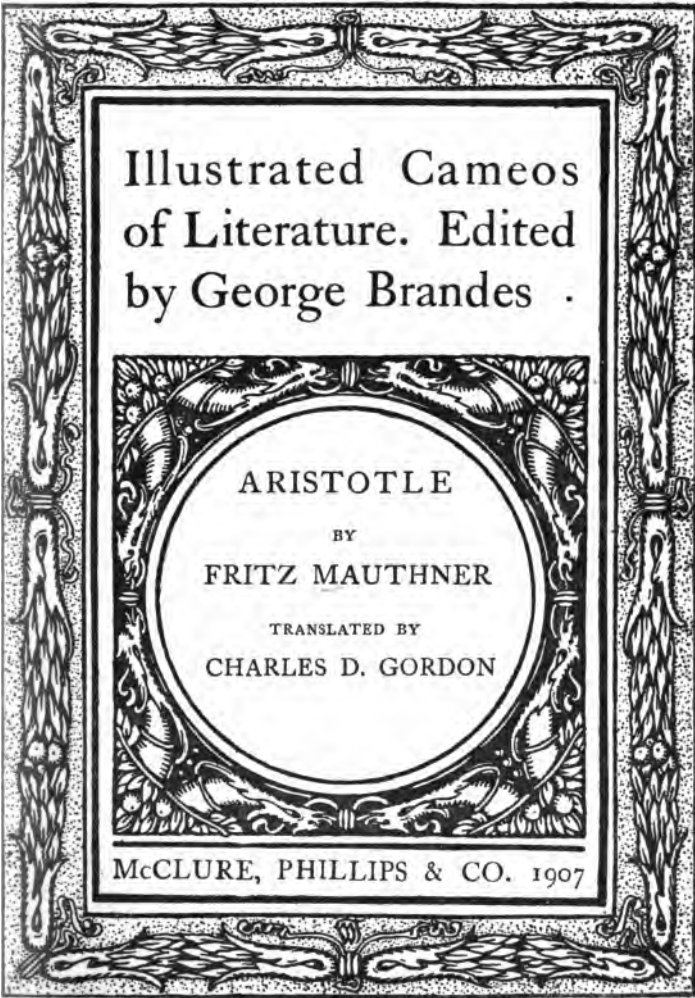
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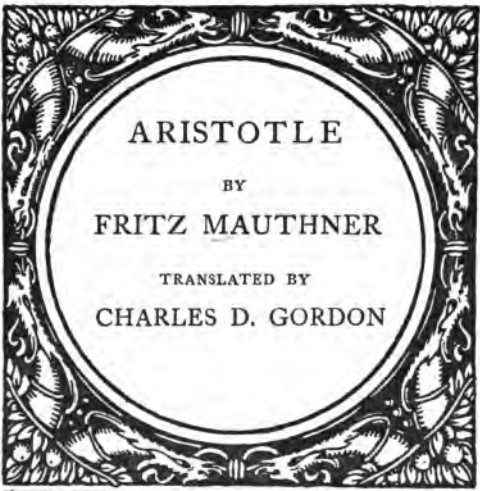
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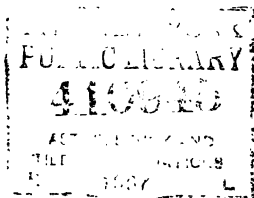


Illustrated Cameos
of Literature. Edited
by George Brandes .



ARISTOTLE
BY
FRITZ MAUTHNER
TRANSLATED BY
CHARLES D. GORDON

McCLURE, PHILLIPS & CO. 1907



Printed in England

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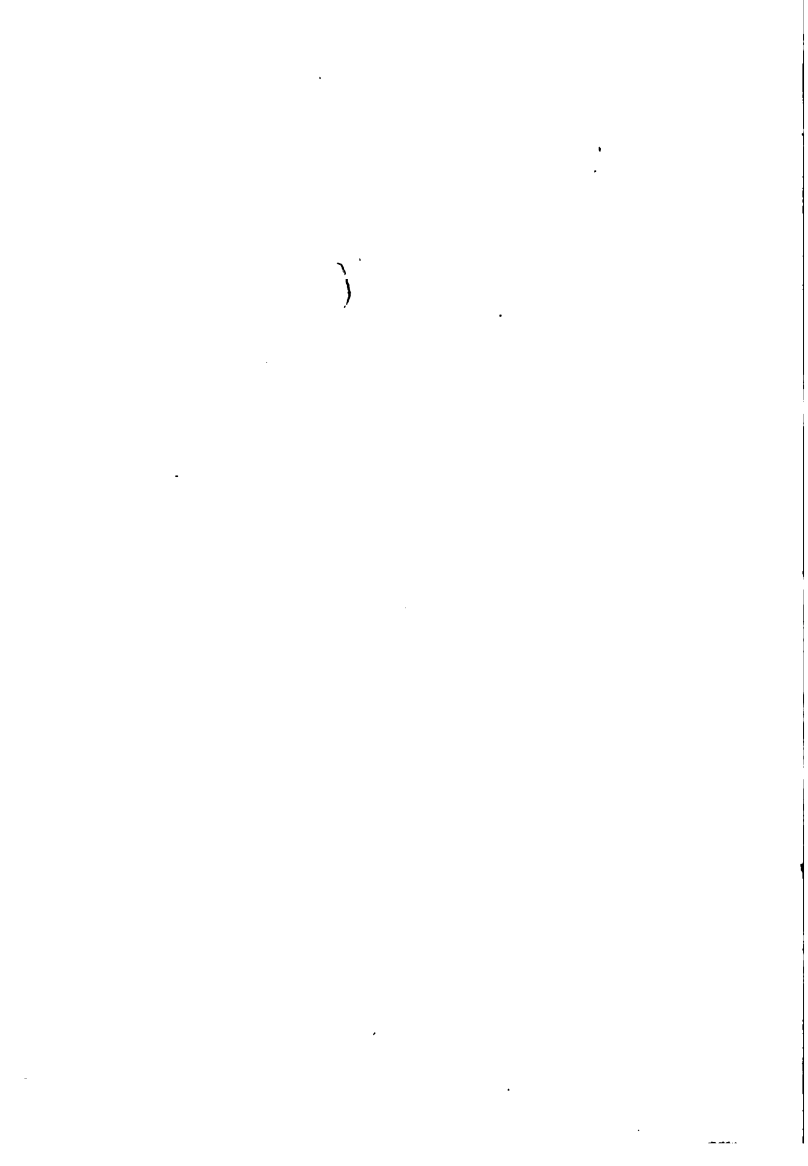


ARISTOTLE



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INTRODUCTION



IT CANNOT BE DENIED that the academic expression "Literature" is an ill-favoured word. It involuntarily calls up the Antithesis of Life, of Personal Experience, of the Simple Expression of Thought and Feeling. With what scorn does Verlaine exclaim in his Poems :

" And the Rest is only Literature."

The word is not employed here in Verlaine's sense. The Impersonal is to be excluded from this Collection. Notwithstanding its solid basis, the modern mode of the Essay gives full play of personal freedom in the handling of its matter.

In writing an entire History of Literature, one is unable to take equal interest in all its details. Much is included because it belongs there, but has to be described and criticised of necessity, not desire. While the Author concentrates himself con amore upon the parts which, in accordance with his temperament, attract his sympathies, or rivet his attention by their characteristic types, he accepts the rest as unavoidable stuffing, in order to escape the reproach of ignorance or defect. In the Essay there is no padding. Nothing is put in from external considerations. The Author here admits no temporising with his subject.

However foreign the theme may be to him, there is always some point of contact between himself and the strange Personality. There is certain to be some crevice through which he can insinuate himself into this alien nature, after the fashion of the cunning actor with his part. He

tries to feel its feelings, to think its thoughts, to divine its instincts, to discover its impulses and its will—then retreats from it once more, and sets down what he has gathered.

Or he steepes himself intimately in the subject, till he feels that the Alien Personality is beginning to live in him. It may be months before this happens; but it comes at last. Another Being fills him; for the time his soul is captive to it, and when he begins to express himself in words, he is freed, as it were, from an evil dream, the while he is fulfilling a cherished duty.

It is a welcome task to one who feels himself congenial to some Great or Significant Man, to give expression to his cordial feelings and his inspiration. It becomes an obsession with him to communicate to others what he sees in his Idol, his Divinity. Yet it is not Inspiration for his Subject alone that makes the Essayist. Some point that has no marked attraction

in itself may be inexpressibly precious to the Author as Material, presenting itself to him with some rare stamp, or unexpected feature, that affords a special vehicle for the expression of his temperament. Every man favours what he can describe or set forth better than his neighbours; each seeks the Stuff that calls out his capacities, and gives him opportunity to show what he is capable of. Whether the Personality portrayed be at his Antipodes, whether or no he have one single Idea in common with him, matters nothing. The picture may in sooth be most successful when the Original is entirely remote from the delineator, in virtue of contrary temperament, or totally different mentality,—just because the traits of such a nature stand out the more sharply to the eye of the tranquil observer.

Since Montaigne wrote the first Essays, this Form has permeated every country. In France, Sainte-Beuve, in North America, Emerson, has

founded his School. In Germany, Hillebrandt follows the lead of Sainte-Beuve, while Hermann Grimm is a disciple of Emerson. The Essayists of To-day are Legion.

It is hard to say whether what is set out in this brief and agreeable mode will offer much resistance to the ravages of Time. In any case its permanence is not excluded. It is conceivable that men, when condemned to many months' imprisonment, might arm themselves with the Works of Sainte-Beuve for their profitable entertainment, rather than with the Writings of any other Frenchman, since they give the Quintessence of many Books and many Temperaments. As to the permanent value of the Literature of To-day, we can but express conjectures, or at most opinions, that are binding upon none. We may hope that After-Generations will interest themselves not merely in the Classic Forms of Poetry and History, but also in this less monu-

mental Mode of the Criticism of our Era. And if this be not the case, we may console ourselves in advance with the reflection that the After-World is not of necessity going to be cleverer than the Present—that we have indeed no guarantee that it will be able to appreciate the Qualities of our Contemporaries quite according to their merits.

So much that is New, and to us Unknown, will occupy it in the Future !

GEORGE BRANDES.



PREFACE



WHILE ENGAGED ON MY "Critique of Language," I composed some studies in the history of philosophy in which it was my intention to show what the most eminent philosophers had done to promote or to hinder the progress of thought in this direction. This survey was too incomplete to admit of its publication as a whole within any assignable time. I therefore am bringing out provisionally some separate completed portions of my work, in the hope that they may interest the public at large. The present volume contains an essay on Aristotle, which I call unhistorical because in it I renounce all the piety as well as the hypocrisy of historical pedantry, and avail myself of all the rights of the criticism of the present day.

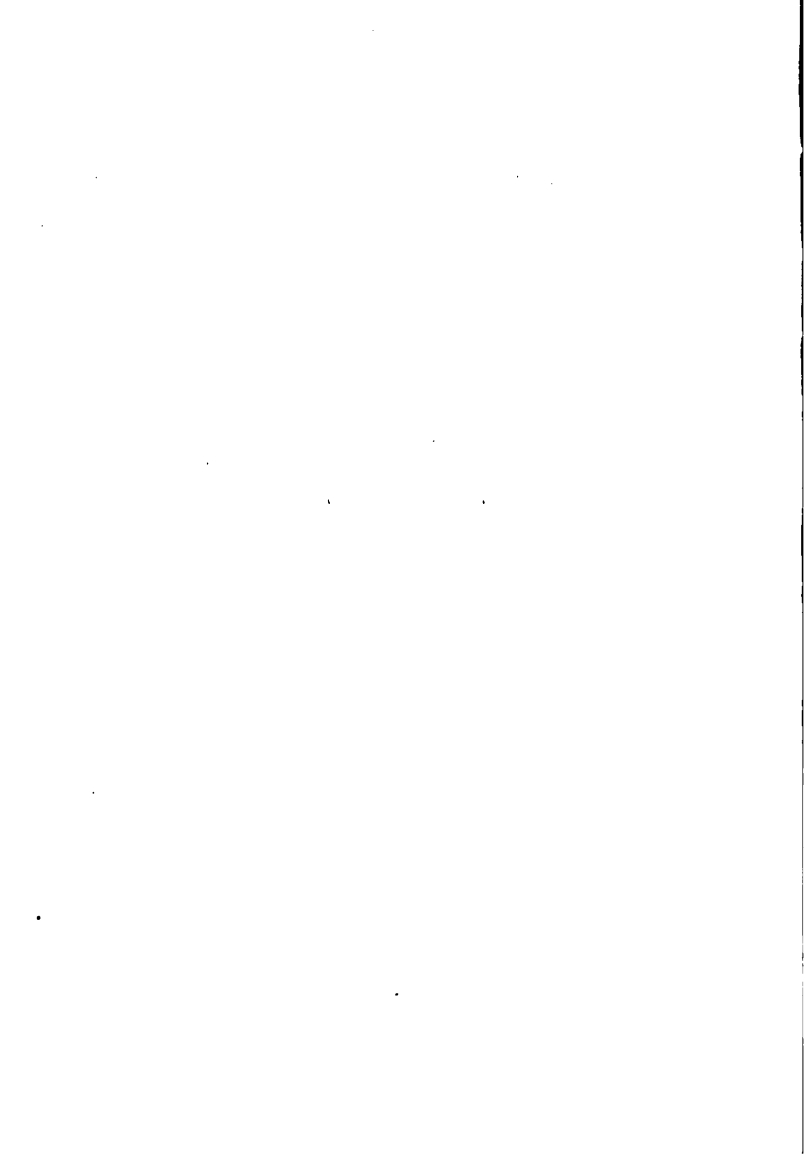
If I have said in one place too much for the expert, and, in another, too little for the ordinary reader, the circumstance under which this Essay originated will, perhaps, serve as my excuse or explanation.

The work might have made its appearance with an alarming display of learning if I had cited authorities for every statement. A few literary data at the end of the volume may compensate for this omission.

Steiner and Ibsen have made us familiar with the notion that we carry about with us the corpses, and that our minds are haunted by the ghosts, of our mental past. The historical pedants, and the Alexandrians of our own times, take these corpses for living persons, and these ghosts for realities. It may be urged, however, that the graves of those who, at any time in the course of the centuries, have been regarded as benefactors of mankind, are entitled at least to reverent treatment. But if we admit this claim without reservation, we slowly transform a spot which we ought to be cultivating into a cemetery where we can do nothing better than kneel down to say our prayers. But the graves of famous men have not all the same significance for us. There are some

before which, as before hallowed places, we stand awe-struck ; in these sleep men who still live for us, and to whom we owe the best we have. There are others which should be preserved and cared for, because, though their inmates are dead to many of us, they are still dear and precious to the mass of the people. But there are yet other graves which exist only for themselves—sepulchral ruins which are preserved from utter downfall only by a vamped up and artificial veneration. Towards such graves piety is out of place if it stands in the way of life and progress.

F. M.



THE CENTRAL GROUP IN RAPHAEL'S SCHOOL OF ATHENS



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ARISTOTLE

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RISTOTELIS LOGICA IPSIUS
Dei logica est. (The logic of Aristotle
is the logic of God Himself.) These
words are written in a page of my Greek
and Latin edition of the "Organon."

They are taken from one of the works of Gutke of Kolln on the Spree, a man of note in his day, incredibly limited in his views and, to an equally incredible degree, a believer in Aristotle. In other respects as well Aristotle is not infrequently compared with God. As a physicist he speaks the language of men, as a moralist the words of God. A Spanish theologian is of opinion that Aristotle in penetrating the secrets of nature surpassed the power of man ; therefore, he must have had the aid of a good or an evil angel. Agrippa speaks of him as a forerunner of Jesus Christ. Such was the consideration in which Aristotle was held during the course of some five hundred years, from the twelfth down to the seventeenth century. Throughout the vast scholastic movement of this whole period he ranked not as one philosopher by the side of others, but as

“the Philosopher.” Individual opponents who, at this time, were already giving vent to their opinions, shrank from attacking him as they would have attacked any ordinary author of an erroneous system, even to them he assumed the proportions of Antichrist. The opponents of Aristotle, however, had not much less success than the opponents of the Bible. For full five hundred years the Aristotelian doctrine of God and the world lay, like an ecclesiastical dogma, with all its weight on the spirits of men.

The fame of Aristotle goes further back than this. Schopenhauer is wrong when, for the sake of a flimsy theory, he asserts that the reputation of Aristotle was only established two centuries after his death. The disciple of Plato, the teacher of Alexander the Great, had won celebrity during his lifetime by copious writings. During the later Hellenic period he still had rivals. But under the influence of the culture of Latin Christendom his authority grew by leaps and bounds as his writings became known. Finally the Arabs completed his triumph in Western Europe. By them the heathen Aristotle was enthroned as the sovereign philosopher of the Christian world. Round Aristotle raged the deepest controversies of the expiring Middle Ages, and they were conducted in the terms of his philosophy. For full two thousand years, from

the world-empire of Alexander onward into the seventeenth century, human thought has lain under the influence of this man's catchwords, an influence which has been wholly pernicious in its results. There is no parallel instance of the enduring potency of a system of words.

The Renaissance aimed at a return to Plato, the ancient and, if we are to believe the chatter of the histories of philosophy, the personal antagonist of Aristotle. Notwithstanding, the infallible position of the latter in the vast scholastic movement remained unshaken. The scientific facts of Copernicus, Kepler and Newton first shook the edifice which had defied even a Gassendi. Molière still jests at the school of Aristotle as at a foe worth reckoning with. Sganarelle (in "Le Mariage Forcé") exclaims: "On me l'avait bien dit que son maître Aristote n'était rien qu'un bavard."

Two thousand years had to pass before the influence of Aristotle expired. Then, like the gods of Greece, he seemed to have fallen dead for ever. Natural science was seeking out paths of her own, and philosophy was beginning to throw off the trammels of the Aristotelian categories. Though the judgments of the philosopher, in morals and æsthetics, might still be nominally upheld, new wine was everywhere

poured into the old skins. Careful observers might have seen easily that even in these fields the old flag was hoisted over a new cargo. Neither in the plays of Corneille or Racine, nor in the dramatic criticism of Lessing was the real Aristotle a living force. Nothing survived except the traditional appeal to his authority.

Still more careful observers might have made the discovery that this had always been the case, namely, that each successive century had inculcated its own peculiar spirit under the name of Aristotle ; that neither in his metaphysics nor in his physics had the philosopher anticipated the labours of twenty centuries ; that in every age the collective developments of human culture had been referred back to him until he assumed the proportions of an intellectual giant.

But the recognition of this fact, after the fall of the Aristotelian school, was hindered by the rise of a new catchword which found expression in the theory, then first coming into fashion, of the sacredness of "classical antiquity." According to this theory Aristotle was no longer "the philosopher"; but along with other manifestations of the classical spirit, such as the obsolete symbols of the Greek mythology and the stylistic exercises of the Roman poets, he was treated with superstitious reverence. The tradi-

tion went yet further. A superstitious worshipper of words, such as no really great thinker is, Aristotle compiled in his writings a general survey of the universe. This compilation, for two thousand years, held all other worshippers of words in bondage, and even now at this present hour, the word-worshippers cling to the author's resounding name as to an idol. Schopenhauer, the resuscitator of the Platonic doctrine of ideas, in his criticism of Aristotle shows little respect for his fellow philosopher. He apparently denies him the right to be considered a philosopher since he strikes him off the roll of men of genius; accuses him of shallowness; describes his "metaphysics" as consisting, for the most part, of miscellaneous and cursory talk about the philosophical views of his predecessors, and sums up the weak side of his mind as a vivacious superficiality. "This is why," he says, "the readers of Aristotle think so often: 'now we are coming to the point'; but the point is never reached." And yet in spite of all this Schopenhauer expresses his amazement at Aristotle's deep insight, at his teleology; admires him even as a natural historian; as often, that is to say, as it suits his system to do so. Sometimes he appeals to his fame as a philosopher, and sometimes cites him as an authority.

Lewes has written a brilliant book upon Aristotle, in which he has exposed him as a thinker and an observer in all his nakedness. The positivist makes a clean sweep of the jejune natural philosophy of the Greek. Yet even Lewes, in his closing chapter, pays his humble respects to Aristotle's name : the final verdict certainly may considerably modify, but can scarcely diminish, our notions of his greatness.

F. A. Lange, the author of an unbiased History of Materialism, recognises in Aristotle the archetype of a perverted intellect; but even Lange stands in awe of the dogma of classical antiquity, and calls the Aristotelian system the most perfect example that history has yet given us of a realised attempt to set forth with unity and completeness a theory of the universe. Kirchman and Eucken proceed on the same lines. They see all the spots, but look upon them as sun-spots, since, for two thousand years, Aristotle has been believed to be the light of the world. So firmly has Aristotle maintained his sway, even since the disappearance of his school, that criticism has never ventured to approach him save in the most ceremonious terms and with the observances of an almost Byzantine etiquette. Not very long ago a professor of philosophy branded as sacrilegious a harmless joke against Aristotle, made in the course of casual conversation, namely, that

he was the "special pleader" for the dark Middle Ages.

Thus the superstitious belief in names clings from days of old until now to the very syllables of that of Aristotle. The five hundred years, during which he was spoken of as the unique source, the infallible teacher of all sciences, have certainly passed away. Yet his name is still mentioned with conventional respect as that of the father of all sciences. In reality he was one of the fathers of Christian theology, though not of the Christian view of the world. Christendom has derived from the Neo-Platonists its deepest ideas of detachment from this world and of longing for the world to come. The early fathers were in no wise Aristotelians. Aristotle was the father of Christian theology only, of the hair-splitting, word-worshipping, scholastic—I might almost have said Talmudistic—pedantry of the mediæval divines. In this respect his fame will suffer no diminution. But when he is hailed in books as the father of all our natural and mental science then the writers are simply repeating word for word what others have written before them. It is impossible that they can have read the writings of Aristotle for themselves, or that they can have read them with independent minds.

One claim to perpetuity, however, can be fully

established, namely, that Aristotle was the father of logic ; at once its founder and its finisher. No less an authority than the great master of philosophical abstraction, Kant, has vouched for this. In the second preface to the " Critique of Pure Reason " he says (in words which are often quoted and never correctly quoted), that since the days of Aristotle logic has never dared to take a step backward, although up to the present time it has never been able to take a step forward. Hegel, the great juggler with abstract conceptions, uses the same language. I may not be able to follow I. H. von Kirchman in supposing that neither Kant nor Hegel ever once had read the *Analytics* carefully, otherwise they would not have made the mistake of overrating them so highly, but what is certain is, that formal logic has been expounded better and with more logical consistency by subsequent teachers than by its founder himself, and that the last century (from Mill to Sigwart and Schuppe) has made considerable advance upon the merely formal logic.

* * * * *

There remains yet to be written, by one who would have to combine an impossible erudition with super-human, abnormal insight, an authentic history of logic, a history of human thought, and therefore also of the evolution of the human brain, whereby it should be

proved how mistaken in theory and how delusive in practice is the Hegelian doctrine of the automatic movement of ideas. The history of thought might be compared, in some respects, to the slow movement of a flock of sheep, many of which, in unequal and yet analogous fashion, make their way whithersoever a blade of grass entices them. The history of scientific logic, on the other hand, might be compared to the movement of the single sheep-dog, who leaps hither and thither, round and round the flock, barking loudly and even biting, but who must, on the whole, follow the trend of the flock. The only difference is that the direction of the sheep depends in the last resort upon the shepherd ; while the direction of thought depends only on the poor blades of grass and their accidental growth. If, indeed, we fail to perceive that even the mind of the shepherd must always be guided by the growth of countless blades of grass, which, taken collectively, are considered good pasture.

One thing, however, is clear, that such a true history of human thought would be only a history of human language.

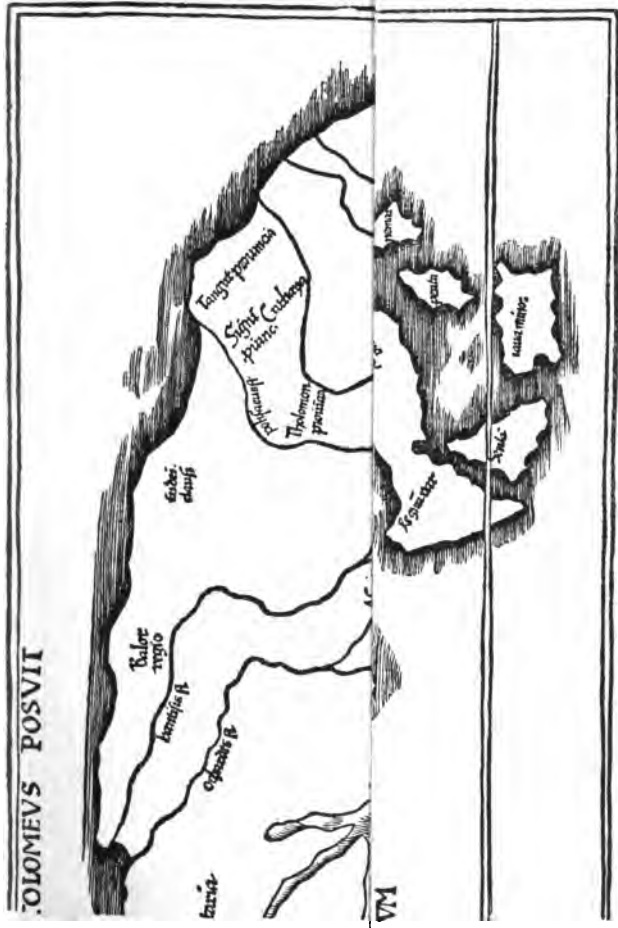
Of course, the history of logic has often been written, its history, that is to say, since the day before yesterday, since the days of Aristotle. As for Pre-Aristotelian logic, a mention of the Seven Wise Men

was believed to epitomise all that was to be known on the subject.

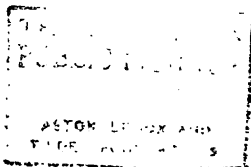
The idea was that there was a logic, just as there is a mathematics, which has existed somewhere since the beginning of things ; and that its history consisted in telling how the laws of this eternal logic, like the laws of mathematics, were gradually discovered. Now in the kingdom of reality there is neither a mathematics nor a logic ; and though there are invariable relations of measure between things, there are *not* any invariable relations between brains and things.

The few really eternal laws of logic are paltry concerns, tautologies such as $a = a$. All effectual habits of thought must be the outcome of self-development. And as there was a time when no brain on earth had begun to think, so our habits of thought also must have had a beginning. And as human language only exists as between man and man so our thoughts also exist only as between man and man.

Man has thought from the first moment of his existence. Human thought raised itself above the level of brute thought when man began, by means of spoken symbols, to differentiate in his memory his observation of resemblances. In the words "cattle" and "beast" a quantity of material was already



C. PTOLOMÆUS. GEOGRAPHY. EDITION OF 1525
 Eastern Asia. In another impression the east coast of Africa extends as far as China.



gathered together on which the logic of later times could exercise itself. Prelingual thought, in the human sense, never existed. Prelogical thought certainly did exist and was no worse than postlogical thought. Our weightiest data of the knowledge of nature come down to us from the period of prelogical thought.

It is certain that logic, as it existed, or exists among Western nations, was founded by Aristotle. This slender title to fame belongs unquestionably to the Greek, even if it should be established—a point to which I shall return presently—that his analysis of mental conceptions is only a misunderstood analysis of grammar, borrowed perhaps from the contemporary grammatical science of India, which at that time had reached a high point of development. The question of priority, when we are dealing with such remote periods of time, does not admit of solution; such questions, indeed, are often insoluble in the full light of the present. Seeing, however, that the first movements of natural philosophy among the Greeks coincided in a remarkable way with a cognate religious movement in the East, there would be nothing very astonishing in the discovery that the germs of the Aristotelian system of logic were of Eastern origin. Goethe had already noticed a resemblance between the Biblical exegesis of the

Talmud and the spirit of Aristotle. It is unnecessary to say that I do not take into account those silly and untenable Rabbinical legends according to which Aristotle became a convert to Judaism or even was a Jew by birth and owed his profound wisdom to writings of Solomon which have since been lost.

The history of Greek Logic before Aristotle is a history of rhetoric. The Sophists were rhetoricians in practice as well as in theory. One of the most famous among them, the talented Gorgias, thought nothing of entitling one of his treatises: "On the Not-Being, or Nature"; so deliberately was language set topsy-turvy.

Sokrates, who belonged to the Sophists in the same sense in which Jesus belonged to the Jews, had never the faintest shadow of an intention to establish a system of thought or logic. Nevertheless he exercised an extraordinary influence, owing to the fact that, with the innocence and indiscretion of a child, he always pretended not to understand the meaning of words, and was always asking, "What does this mean?" His irony consisted in this: that he was well aware that he, in his honest ignorance, was on a higher level than others in their perfect certitude. Moreover, by discarding the whimsical, subjective, ingenuity of the rest of the Sophists and by trying to find out the meaning

conveyed to people by every word ; further, also, by going back from the words to their meanings, and from their meanings to the sense impressions (without any system and quite in a prelogical way), Sokrates became the first pioneer of a critique of language. Yet it is as difficult to assert anything with certainty about the thought of Sokrates as it is to dogmatise about the teaching of Jesus Christ ; in both cases our only sources are the memoranda of enthusiastic, but, relatively, far inferior, disciples. Aristotle, who was a pupil of Sokrates in the second generation, is impervious to the least breath of his spirit.

Prantl says of Aristotle : " The best and deepest features of the Aristotelian logic, in virtue of which it is justly entitled to a place among the most remarkable phenomena in the history of human culture, are precisely those which ceased the soonest to be understood. For as soon as the external and more technical accessories of this deep philosophically conceived logic were partly torn and extracted from their context, partly expanded by a cheaply purchased technical dexterity and yet again extracted, this now so-called logic was used almost exclusively as a mere school exercise ; and the emptiest heads, after assimilating its contents themselves, transmitted it in the same form to their

scholars. The consequence was that, in this succession of trivial logicians each one simply copied his predecessor, while the system in its entirety was attributed with indescribable *naïveté* to Aristotle, as its original author and founder. The fate which has befallen Aristotle resembles that which has befallen the New Testament."

Prantl, from whose learning all subsequent historians of Western logic (including myself) have borrowed copiously, thus discriminates between two logics. One, which is at present taught in our schools, and, in his opinion, is a corruption of the original, and the authentic system, which he describes as conceived in a deeply philosophical spirit. It must be admitted, however, that our school logic can be traced back to Aristotle himself through a direct historical descent. It is his highest title to fame that for thousands of years he should have settled the laws of thought as irrevocably as Euclid settled the principles of geometry. If therefore our school logic is worthless, the fame of Aristotle in this respect falls to the ground, for the prodigious success of his system must not be attributed to him, but to the mechanical continuators of his work. The position, then, may be stated thus : Aristotle has become famous for an achievement which is not his own ; while, on the other hand, his genuine work lies buried under misunderstanding and awaits

resurrection. I believe that I can show proof that the logic of Aristotle differs from the frightfully dry school logic of his continuators only in certain obscurities and in some extremely crude general conceptions under the abstract terms of which every Aristotelian, for the last two thousand years, has been able to find comfortable accommodation, in each particular case, for the mental requirements of his own age. Intelligent readers will not expect me to add that certain portions of this logic are entitled to and must receive respectful attention apart from the purely historical standpoint. Even the planetary system of Ptolemy is of high interest to the historian; only as a scientific theory it has been ruled out of court. But if we are to listen to our modern Alexandrians, Aristotle's explanation of the universe is still entitled to a hearing. Voltaire has already expressed the situation as well as any one can: "On ne la comprend guère: mais il est plus que probable qu' Aristote s'entendait, et qu'on l'entendait de son temps."

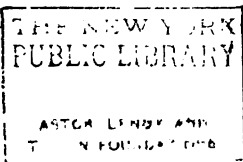
And yet on the very threshold of the system which Aristotle has constructed stands a warning to the philosopher who has formed no conception of the real nature of language—a warning to which neither Aristotle himself nor any one who has come after him has given any heed.

What I here touch upon is the antithesis between "apodeictic" and "dialectic" knowledge. Already before Aristotle's time three kinds of thought had been distinguished: first the apodeictic or demonstrative process, worked out logically from absolutely certain principles, which demonstrates clearly eternal truths; secondly, the dialectic, which, no doubt, is a logical process, but starts merely from individual opinion, aims at convincing the parties to the argument, and therefore only ascertains probabilities. Thirdly, there is the sophistical process, which attempts deliberately to prove untruths, and is plainly a misuse of logic. Now for the apodeictic as well as for the dialectic method Aristotle recognised one common instrument, namely language.

At this point he might have said to himself that it was an extremely awkward circumstance that this same instrument, language, should be at one moment suitable for the discovery of truth, at another only for reaching an approximate probability, that words sometimes convey to us the ultimate nature of things, sometimes only defective notions of them. Here again also we see clearly the puerile anti-nominalist conception which led Aristotle to believe that he possessed in the notion of species the secret of species, the key with which to unlock the riddle of the universe. More-



C. v. MEGENBERG. NATURAL HISTORY, 1475
Various wonders of the Sea (on the authority of Aristotle)



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over, in the use of the word *logos*, as is well known, a hopeless confusion prevails. In the same way even in the case of the word "dialectical," we are puzzled in what sense to understand it owing to the frequent changes in the use, especially the modern use, of language. The Greeks often used the word quite familiarly in the sense of "talk," tittle-tattle or "ale-house debate."

No one has taken verbal debate, the traffic in words, so seriously as Aristotle. Despite Prantl Aristotle was the true ancestor of the schoolmen. In the proposition: "God made the world out of nothing," he also would have explained "nothing" as the real substance of the world.

Prantl, however, is certainly right in clearing his client Aristotle from the suspicion of having composed his logic merely as a set of directions to expedite the business of thinking, as an introduction to the study of philosophy, such as it came to be considered soon after the days of its inventor and is taught to our boys and, within the last few years, to our girls also. The use which Aristotle himself makes of his own logic has not the mechanical character which it assumed later and which Goethe was still able to parody, as existing in his day, under the nickname of *Collegium Logicum*. Aristotle's primary aim in his

logic was obviously not to lay down directions for thinking correctly, nor to answer the question "How ought we to think?" but much rather to explain how we do think. The process of thinking was for him a real object of inquiry; an inquiry which at the present time we should describe as psychological. Now it is precisely in an inquiry of this sort that Aristotle, from the standpoint of his observations, is bound to make shipwreck. For he insists on treating the words, which connote his hackneyed conceptions of mental life, as real forces.

* * * * *

There is this peculiarity about Aristotle's reputation. If his collected writings had been lost more than two thousand years ago and his authority had not dominated posterity as disastrously as it has done, the sudden re-discovery of his works at the present day would enable us to form an unprejudiced judgment on their importance. And I am convinced that no human being would suggest that this great compiler should be numbered among the men with whom a scientific inquirer at the present day would have to reckon. We might admire his extraordinary industry, and we might, with his help, be in a better position to give an approximately correct description of the theory of the Universe which was current among cultivated

Greeks in the days of Alexander the Great. Considered thus, from the historical standpoint, Aristotle's reputation might be enhanced. But it is exactly this historical estimate which is rendered difficult by the ever repeated attempt to bring the thought of Aristotle, in one connection or another, into line with the thought of our own time. Let us call to mind, for instance—to refer to a previous illustration—that the *Poetics* of Aristotle formed, during the seventeenth century, the code from which the French classical writers, who are still held up to the present generation as literary standards, never thought it possible to swerve; that a century later Lessing expounded the same laws of criticism as though they were as infallible as the geometry of Euclid; and that to-day, at least in our schools, they retain a conventional place in the curriculum of studies. The above does not hold good to the same extent of his treatises on politics or natural science. Yet not only historians of philosophy, but even men who are endeavouring to reconstruct our theory of the Universe on the basis of modern knowledge, continue to rack their brains upon his metaphysics. Besides, his logic is still so highly valued that we may say with truth that in our schools to-day the logic of Aristotle (no doubt with verbal alterations) is still taught with the same authority as

the geometry of Euclid. In our most widely circulated school-books, in our outlines of the introductory study of philosophy, what we find page by page is the old Aristotelian logic. Moreover, the time is still far distant when a calm historical survey can be taken. The religion of the Greeks comes within the scope of historical review ; but Catholicism is as yet outside it, and Aristotle has become a doctor of the Catholic Church. Any one who proposes to read the scientific writings of the ancients with any other object than historical instruction will perceive, after the perusal of a very few pages, that his pains are likely to be perfectly fruitless. We know that, except by means of new observations, any advance in human knowledge is, by the constitution of our minds, an impossibility. But the weak side of the Greek mind was that they had formed no idea of the importance of observation. They were not only without our telescopes and microscopes, our thermometers and barometers, all our instruments of precision ; the very conception of our minute units of measurement (by which our astronomers measure the thousandth point of a second, and our chemists the fractions of a grain) was absent from their minds. But this was not the worst. They were deficient, generally, in the sense of observation. They had no insight, strange as it may sound, into the value of a careful use

of our senses. At the present day any magistrate will caution witnesses that they must discriminate between their own impressions and those which they have formed from hearsay. The Greeks of the classical period made no such distinction. At least Aristotle who, perhaps, for this very reason, is not to be considered one of their best intellects, describes pell-mell what he had himself seen superficially, what he had read in books, what he had heard from ignorant fishermen, hunters, and soothsayers. And if he did make observations on his own account, he was often more inaccurate than his fishermen, hunters, and soothsayers. In support of this assertion I shall cite a quantity of examples, following, at the same time, Lewes' analysis, partly for the sake of convenience, and partly because I hope to find some small support in the authority of a critic who retains so much pious respect for Aristotle. Lewes, in his book on Aristotle, has collected a pretty aggregate of characteristically incorrect observations on the part of the latter, and has attributed them to the want of a principle of verification. The real reason why Aristotle has become unreadable by any one who is not a student of history Lewes failed to discover, because he still believed unhesitatingly that language is an adequate organ for the communication of thoughts.

The critic of language, however, knows not only that knowledge is advanced through observations alone, but also that all concepts of a language are only symbolic abbreviations for sense-impressions or observations. What in this respect holds good for Aristotle holds good also in essentials for all philosophers who saw the details of nature differently from ourselves. If we examine a living word, we find that it is a mnemonic symbol for our impressions. Supposing therefore that this same word is used by an ancient writer as the mnemonic symbol for his impressions and that these impressions differ from ours, it follows that we either do not understand him at all or we understand him in a wrong sense. We find ourselves in this dilemma as regards Aristotle not only in his use of abstract terms, but often in the simplest points of natural science. We have learned how hard to define are such words as: "subjective," "experience," "development," "organism," "character," "law of nature" and so forth; we shall now see further that in reading Aristotle it is just as hard to find true equivalents for such concrete terms as "heart," "bones," "nerves," "brain," &c. &c. What is so unspeakably irksome to modern students in their pursuit of the Greek philosophers is just this persistent feeling that there is often no common ground



C. v. MEGENBERG. NATURAL HISTORY, 1475
Snakes and other poisonous beasts

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of thought between them and the author they are reading. For any one who is not occupied with the purely historical interest this is especially the case in the study of the writings of Aristotle on natural science. He saw nothing correctly unless it lay as clear as water on the surface of things ; thus he associates the words he uses with other meanings than ours and we find it impossible to follow him, not because we are too stupid for him but because he is too ignorant for us. On the other hand, if we erroneously attach our conceptions to his words, we can of course manage in this way to attribute to him the modern ideas of a Newton or a Darwin and by so doing are guilty of a monstrous falsification of history. Contemptuous things have been spoken concerning modern research. Compared with Aristotle, and in so far as our knowledge of nature surpasses his, it has been likened to a dwarf perched on the shoulders of a giant. It is not, however, by our research that Aristotle has been outstripped in the knowledge of nature, it is by every schoolboy to whom the results of that research have been imparted. You may call *him*, if you please, a dwarf perched on the shoulders of a giant, but in this case, the giant is not Aristotle but the collective outcome of past ages of inquiry.

Lewes remarks correctly that Aristotle, like all the

Greeks, was credulous. He did not think that he was in possession of all knowledge but he believed that all knowledge was within the capacity of the human reason. The contemporary philosophy of the East had come to the conclusion that in resignation the spirit of man had found the highest realisation of its aspirations. The Preacher teaches that all knowledge is vanity. Aristotle had not the faintest conception of such a feeling. He stands firm on the level of antiquity which never knew doubt in the modern sense of the word. In those days it never occurred, even to the boldest scholar, to test the facts on which his logical conclusions rested. When the gifted astronomer Eratosthenes made the first measurements of the length of the arc of a meridian, he assumed as a matter of course that the two opposite points of his measurement, the cities of Alexandria and Syene, lay on the same meridian ; but the obvious suggestion never occurred to him that he should first have tested this assumed fact and thus have avoided a gross mistake in his calculations. Here we have an instance from which we can see that the source of all the mistakes of the ancients—a source which has certainly not run dry—is also the fountain-head from which all our own mistakes arise. If we trust blindly to the recollection of others and do not rely upon our own senses, what

else are we doing but putting words in the place of things themselves? But Aristotle was guiltier than others, for as the father of Logic he drew conclusions from words without having first brought these conclusions to the test of facts.

“What is termed the explanation of a phenomenon by the discovery of its cause is simply the completion of its description by the disclosure of some intermediate details which had escaped observation. The phenomenon is viewed under new relations. It is classed. It is no longer isolated but united on to known facts ; as when the ascent of a flame or the fall of an apple are seen to be particulars of a general fact.”

From this truth Aristotle, perforce, stood a long way off, since its first glimmerings dawned slowly only a few centuries ago, and even now there are some among inquiring minds, of whom the light has not taken full possession. What Galilei calls an explanation of gravitation, Newton of the orbit of the stars, Darwin of the origin of species, was fundamentally only a more accurate observation and description of these natural occurrences. These great men thought they had explained something because they had described nature better than their predecessors. Aristotle, also, certainly believed that he had explained natural phenomena. But he has never got so far as even to

describe them correctly. It almost amounts to saying the same thing if we assert that, in all his endless writings, Aristotle has not enriched natural science by the addition of even the tiniest law. He explains nothing because he has no real descriptive faculty. Whole chapters of this world-famed logician read like the pages of a fortune-tellers' Book of Dreams ; but, with a silliness exceeding that of the ordinary concocter of a Book of Dreams, he not only tells us (to keep to our metaphor) that the number 14, for example, signifies the birth of a girl, but he also gives an explanation to account for it.

At the same time, in order to be fair to Aristotle it must be expressly laid down, that not one of his successors, even to this hour, has seriously taken into account the momentous discovery that all explanation is only a matter of language, and that all causality exists only in words. And further it must be admitted that the tendency to personify those abstract conceptions, by which we connote inconceivable causes, and thereby to treat them unconsciously as active and actual realities, is one ineradicably planted in the human mind. Notwithstanding, Aristotle is still fairly open to the charge of submitting deliberately to the bondage of words. At the present day a cautious investigator is careful to define every conception which admits of

difficulty, before applying it, and insists that the conception thus defined shall be understood in one sense and one sense only. If his definition corresponds to the common usages of language, well and good, if it deviates therefrom no harm can accrue. Every one of our investigators understands more languages than one. Thus he knows by experience, even without the help of linguistic science, that no reliance can be placed on common usage. Aristotle, who could not have thought except in Greek, draws his conclusions from the words of his own language, and when, for example, he tries to prove logically, therefrom, that one thing exists in another : (the part in the whole, the idea of species in the idea of genus, the finger in the hand, sovereignty in a king) the conviction is forced upon us that we are dealing with an untranslatable and meaningless play upon words. The continued attempts to discover sources of knowledge in the *Organon* of Aristotle remind one of the often renewed endeavours to extract by means of improved appliances, gold and other precious metals from the dross-heaps of worked out mines. Such experiments were tried for ages on the ores, they were tried for ages on Aristotle. They were tried so long as our forefathers had hopelessly unscientific means to work with. At last, however, the day came when the return was no longer profitable,

when alchemy was fit for nothing but the useless efforts of the laboratory and the study of Aristotle for nothing but the tasks of the school-room.

The faults of the *Organon* are to be found on every page. It is difficult to classify them in groups. Grave fundamental mistakes stare the reader in the face. Aristotle did not recognise that definitions are always, properly speaking, explanations of words, and do not go beyond a certain recognised use of language. He was led by his conception of Definition to accentuate still more strongly his overestimate of language. He represented the modality of the syllogism, the degree of subjective truth unskilfully and wrongly; and in close connection with this, perhaps, is the circumstance that, although in theory he was an admirer of mathematics, yet, like all his contemporaries, he was incapable of considering nature from any other point of view than the qualitative. The quantitative mathematical consideration of nature is of later origin, and the algebraic logic which expresses admirably the modality of the syllogism was certainly beyond his horizon.

The fundamental defect of the *Organon* is and always will be, despite all that may be said to the contrary, the want of any point of view based on a theory of knowledge. Of the theory of knowledge, which

may perhaps be regarded, since the rise of criticism, as identical with philosophy, the father of logic never caught so much as a glimpse. Sokrates might as well never have lived. Aristotle regards the evidence of the senses at the bottom of the ladder, and the conclusions of reason at the top, as both alike infallible. It is because he never thinks of a theory of knowledge which would test these two bases that his doctrine of deduction is so formal, and his doctrine of induction so superficial. And for the same reason he was led in the application of his deductive, as certainly as in that of his inductive method, to make such astounding mistakes.

Many of his faulty observations prove that his was a mediocre intelligence: even distinguished men, it is true, have made blunders. What marks him out in an especially unfavourable manner is precisely this thralldom to words, since it has the closest bearing on his logic. If he had grasped the fact that all judgments and conclusions are to be traced back to perception, and are therefore contained in the words in which these perceptions are epitomised, the great formal acuteness of his mind would have led him on by a more logical process to a distrust of words. He persisted, however, incessantly in making words the starting point of his explanations. For each perception he

found different words which he termed its different causes, because they described the phenomenon under different aspects. I am quite clear in my conviction when I say that the histories of philosophy are wrong in taking his four kinds of causes to be a logical division of the conception of cause. I feel certain that Aristotle conceived each phenomenon as having four causes which he terms severally the formal, the material, the efficient, and the final. I might state it thus: When he described or mentioned a phenomenon, whether he had in view the specific nature, the substance, the series of its changes or the end it was desired to attain, in every case he used indiscriminately the word "cause"; and this has for centuries given rise to new confusions. This is especially clear with regard to the formal cause, by which term he designates the "quiddity," or essence, or nature of a thing. The word "quiddity" is at last dead and buried. But the equally empty notion of "essence" or "nature" remains with us still, and we speak of the "nature" of electricity, or the "nature" of monarchy as if the term conveyed something real to our minds—almost in the same way as when we speak of the soul of man. Investigators of to-day, however, will be chary of drawing conclusions from this vague expression "nature." Aristotle did not shrink from doing so, because in his

system of logic indefinite notions and generalised notions were upon an equal footing. It seemed to him that it belonged to the nature of the circle to be the most perfect line; from this perfection he drew the momentous conclusion that the motion of planets must be circular. The centre appeared to him, to be by nature, the noblest portion of the body; from this he drew the conclusion that the heart, wrongly regarded as being in the centre of the body, must be the seat of the soul. For nearly two thousand years astronomers and physicians accepted those conclusions and went round and round, after their teacher, on the most perfect line of the circle. In passages, too many to enumerate, we detect Aristotle in such absurdities. It speaks against him as student of nature that he should make wrong observations; but it speaks still more against him as logician that he should think incorrectly. When, for example, he tries to prove the above-mentioned perfection of the circular line by saying that, without retrogression, perpetual motion could only take place on the line of the circle, he makes our heads reel, even if we fail to perceive that the same conclusion might be drawn quite as well from the ellipse.

The enumeration of fire, water, air, and earth, as the four elements, a division still to be met with

in popular phraseology, plays a huge part in the physics and physiology of Aristotle. I do not intend to enlarge on this point, as it is clear that under the four elements he means something quite different from our notions of fire, water, air, and earth. This is one of the cases in which we cannot misunderstand the meaning of the ancients, because we do not understand it at all. In no instance where the clue to his meaning is lost to us ought we to accuse Aristotle of talking nonsense. The cord of communication between his thought and ours is cut.

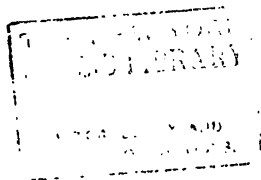
One must bear in mind that mechanics in ancient times had reached a high level of attainment. The great engineer, Archimedes, whose practical and theoretical genius is much admired by our modern physicists, lived only one hundred years after Aristotle. What opinion, then, are we to form of Aristotle, who, so shortly before Archimedes, ventured to write about mechanics, and in speaking, for instance, of the lever (which on unequal arms sustains unequal weights in equilibrium) was capable of talking such philosophical nonsense as to attribute this mechanical action to the wonderful properties of the circle?

The authority of Aristotle only disappeared gradually as the sciences advanced step by step. Astronomy and mechanics came to maturity more quickly than the rest,

Zon dem Forstteufel.



FROM C. GESNER'S BOOK OF ANIMALS, 1583



and thus Aristotle was banished more speedily from their spheres. But up to our own day the attempt has been made to vindicate his importance as a teacher of the science of biology. As already indicated, attempts are still made to read into his works the anticipation or the knowledge of more recent discoveries. There would really be nothing exceptionally to the credit of such a multifarious writer if, among his countless memoranda, put together entirely without regard to system, he had for once accidentally jotted down an observation which was afterwards forgotten until, at a still later time, some more recent student again brought it to light. Lewes, however, has proved convincingly that these famous anticipative discoveries of Aristotle amount to nothing. In particular, on his observation that some fish are placental, Lewes makes a remark which is well worth reading. Aristotle had only a very vague notion of embryology ; he knew nothing at all about the physiological function of the after-birth. So that, when he mentions the existence of fishes which bear young like mammalia, this observation or note has not the same sense which it would have if made by a modern man of science. The "laws" of nature were unknown to Aristotle, therefore, when he cites an instance which illustrates for us a departure from those laws, the exception

causes him no surprise—the one effect of all others which it should produce. I might say that the concept fish was so vague and undefined in Aristotle's mind that the existence of placental fish made no alteration whatever in his notion of the general term. The lowest stages of our natural science include classification ; and in no single instance has Aristotle made our classification fuller or more precise.

As an anatomist Aristotle is a bad observer and a worse reasoner. He may have dissected many animals. He may have collected industriously the data, procured from butchers and priests, from soldiers and embalmers ; of the muscles and nerves, of the vessels and tissues of the human body he was quite ignorant. The famous physician Galen (some five hundred years after Aristotle) occupies a place, from our standpoint, far below that of Archimedes the engineer. Yet Aristotle cannot for a moment be compared with Galen.

The question, whether Aristotle had dissected human corpses or not, is of no importance. His mistakes would be only the more gross if it could be proved that he had made them with a previous knowledge of anatomy. In that case we should be forced to conclude that, for the sake of some logical or metaphysical prepossession, he had shut his eyes to the most obvious facts. We might no doubt, at a pinch, understand

that he had failed to distinguish between veins and arteries, but even on that supposition what he offers as the best account of the brain remains incomprehensible. We know from ocular demonstration that the brain fills up the skull and is an organ supplied with an exceptionally large number of blood-vessels. Aristotle's account is that the hinder part of the skull is quite empty, and the brain itself quite bloodless. He writes as if, at the utmost, he had had before him the washed-out brain of a calf or that of a cooked goose. He does not appear to have had any conception of the existence of the nerves since the word, which certainly he makes use of, may mean all manner of things, such as sinews or muscles, but not nerves in our special sense. (The old meaning survived in the German "nervig," and is still retained in the French "nerveux.") Again, of the function of the nerves, their connection with the brain and the spinal marrow (he identifies the latter group of nerves with the marrow of the bones, and even we habitually use the wrong term) he had not the faintest notion. He is aware that there is a duct leading from the back of the eye, and he has therefore seen—if you can call it seeing—the optic nerve. But here also his observation is not accurate enough, and he does not describe the course of the optic nerve correctly; his conclusions also

are on this point so illogical that he ascribes to the optic nerve the function of nourishing the eye.

So bad an anatomist is not likely to be a good physiologist.

His remarks on the cause and function of the breath are comical. He understands so little about the functions of the brain that his teaching on this point seems to have been even retrograde. He denies in set terms (so that the contrary must already have been maintained) that the brain is capable of sensation. It is the coldest member of the body and serves to moderate our natural heat. It surely follows that so wretched a physiologist could not possibly be a good psychologist. Yet here again we must remember in his favour that it is not his fault if we, with pedantic uniformity, insist on translating his conception $\psi\upsilon\chi\eta$ by the term soul. Already in Latin an equivalent had to be found, sometimes in "anima," sometimes in "animus," just as sometimes we speak of the "soul," sometimes of "the vital principle." Yet I hardly need to recall to mind that abstractions such as these, with "spirit" and "the vital principle" thrown into the bargain, are no clearer to us to-day than $\Psi\upsilon\chi\eta$ was to Aristotle of old. We may laugh at the mythology of the Bible with its story of God having breathed the breath of life, that is the "animus" or $\Psi\upsilon\chi\eta$, into man through

his nostrils : our self-satisfied laughter does not make us one whit the wiser.

This word of apology cannot, at the same time, deter me from laying on Aristotle the responsibility of having started the psychology of the Middle Ages on its strangely crooked paths. Already we find in him the minute hair-splitting definitions concerning the indivisibility and perfection of the soul. Already he uses words for the varying capacities of the soul, "understanding" and "reason" and so forth. The passage from Aristotle's doctrine of knowledge down to the most attenuated conceptions of the pure reason of Kant is made over a nebulous suspension-bridge, of which the chains and girders are closely interlinked words.

If the poverty of Aristotle's mental philosophy fails on the whole to strike us because our own psychology has only just begun to discard his ideas, the meagreness of his doctrine of the senses is all the more obvious because here the inadequacy of his physiology cries to heaven. To make matters worse, Aristotle here again brings his four elements into play, and the fact, that the senses are five in number, does not refrain him from connecting each one of them, where it is possible for him to do so, with one of these mystic elements. We seem to be reading one of the writings of the ecstatic

mediæval theosophists, but without their dilettante profundity and poetry. The words sound like the words of a chorus of countless fools: "Now it is evident that we must in this way assign and adapt each one of the organs of sense to its corresponding element. The eye, we apprehend, belongs to that of water, the hearing to that of air, the sense of smell to that of fire, touch to that of earth, taste is a kind of touch. . . . The eye is closely dependent on the brain; for the latter is the most moist and the coldest portion of the body. . . . When there is something igneous in the diaphanous, there is light. When none, there is darkness. But that which we term diaphanous is neither the property of the air nor of the water, nor of any other element; but it is a common nature or force which, not existing separately, is found in these and other bodies, in some more, in some less."

So enslaved is Aristotle by his own terminology that he raises transparency to the rank of a living and effectual force, just as he personifies cold.

We must not suppose that he had formed any notions in the least resembling our ideas of acoustics when he connects the sense of hearing with the elements of air. Naturally the vibrations of resonant objects had not escaped his attention. But beyond this observation he did not go.

What Aristotle says and teaches on the subject of memory is no doubt agreeable to our modern notions. He has some inkling that the immediate impressions of the world of reality must leave traces behind them, traces in the brain, not, as we should expect from his system, in the heart. Even the loss of memory in old people he explains mechanically by the gradual hardening of the brain. He is also already feeling his way towards the subsequently established laws of the association of ideas. We must take very great care, however, to avoid any importation into his words of our modern physiological knowledge, which, in spite of all shortcomings, is, as far as it goes, to be depended on.

Another subject on which Aristotle talks utter nonsense is sleep. This most everyday occurrence in the life of man remains, it is true, even at the present time, unexplained ; that is to say, our observations and descriptions of this phenomenon are still imperfect. But only some old herbwoman would venture to-day to endorse Aristotle's opinion that people with big heads and small veins sleep a great deal, because the bodily moisture cannot ascend quickly enough through small veins, and because big heads cause too great an evaporation of moisture. What a satisfaction it would be to be able to call up the great Aristotle before one and

make him give a direct answer "Yes" or "No" to the question whether he had ever at any time, or even in one single instance, really made and tested the observation that a man with a big head sleeps more than any other man.

His huge collection of notes which, under the title of "The Natural History of Animals," has become so famous, seems to us so disorderly and unmethodical that it throws the worst possible light on the logical faculty of this father of all the sciences. It does not help him out of the difficulty to assert that this disorder has been introduced by later editors. For not even *malice prepense* or the most unhappy accident could have brought about so complete a confusion. Besides, the mistakes are too numerous and too gross to be condoned. According to Aristotle males have more teeth than females, not only among mankind but among sheep, goats and swine.

According to Aristotle there is a species of ox which has a bone in its heart. According to Aristotle the blood in the lower parts of the body is blacker and thicker than in the upper; the blood of a woman is thicker and blacker than that of a man; therefore a man is nobler than a woman, and the upper parts of the body nobler than the lower. Any butcher or soldier might have taught him better than that. In his

credulity, however, he serves up still more fabulous tales. The hen partridge becomes impregnated if the wind blows from the direction of the male bird ; at certain times the same effect is produced simply by the cry of the male bird flying over her. The bite of a mad dog produces rabies in every animal with the sole exception of man.

His tendency to draw logical conclusions rather than to observe nature is incorrigible. His statements about the viscera and the course of the veins are evolved by relentless logic from the greater perfection of a single as compared with a plural origin. Hundreds of passages might be quoted in exemplification of this perverse process of thought. We have already mentioned that the seat of the heart is the noblest part of the human body. In the brutes it lies exactly in the centre ; in man it leans a little towards the left side in order to compensate the greater cold in that quarter ; for in man the left side is the colder of the two. He certainly makes this statement only because he considers the right side nobler than the left.

Had he ever, if only when he was a boy, held a frightened bird in his hand, he could not have asserted that the phenomenon of the palpitation of the heart through fear is only observable in man. If he had only

inquired of his cook, he could never have said that men alone have flesh on their legs. His explanation of the calf of the leg in man from the upright position of the human body is not altogether a stupid one. Neither can we afford to reproach him with his fable concerning the effects of the upright walk of man, seeing that from the days of Herder until now trash of this sort has formed one of the favourite commonplaces of our school-books. It might be well to remember that geese also walk upright and hold their heads on high.

It is not my business, however, in this survey to cast ridicule on Aristotle on account of a few venial mistakes, but by copious instances to show clearly that the father of logic and method not only observed incorrectly but that he had a mind naturally unfitted for observation. We cannot expect him to have mastered one of the profoundest of modern sciences, or even that he should have grasped the simple fact that all explanation is simply description. Yet the really first-rate minds in all ages have at least instinctively aimed at giving good descriptions before offering to posterity as an explanation the analysis of their own special descriptive words. In this sense Aristotle's mind was so far from being first-class, that, on the contrary, he took up any word, no matter what, and accepted it as a description.



FROM C. GESNER'S BOOK OF ANIMALS, 1583
The most repulsive animal ever seen. It is called the Su, and belongs
to the New Countries

RECEIVED
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STATE OF TEXAS
AUG 15 1964

Against this is to be set the service rendered by Aristotle in fixing the mould of scientific and technical language. But perhaps this service is more apparent than real ; perhaps his example and the mental defects of his school have only brought about an ossification of scientific terminology ; perhaps we are still unconsciously schoolmen as long as we credit Aristotle with such services to language ; we know and teach that all real additions to human knowledge are, first and last, additions to the contents of human memory—contributions to the riches of our vocabulary—that the two are, in fact, identical. This being so, it would be remarkable if the man to whom we owe not a single new discovery, not a single new observation of importance, should yet in any way have increased the resources of human speech. In fact, he has not done so ; he has only tried pedantically to enumerate and arrange them, just as a librarian who cannot read might arrange in outward order the treasures of his bookshelves, or as a dog might keep watch over the load of hay which never tempts his appetite. In the writings of an admirer of Aristotle, Alexander von Humboldt, we meet with the surprising remark that the grounds for believing that our knowledge of zoology was directly increased by the military expeditions of Alexander the Great are little better than legendary. Humboldt tries

in a learned manner to justify himself on this point as against the biographers of Aristotle. But we feel grave misgivings about a student of nature who allowed such an opportunity to pass him by.

The deeper we look into the psychological side of human thought the more we see that Aristotle, even if his capacities had been better, was not in a position to understand our modern conceptions of the theory of knowledge. Our fundamental point of view that the world of reality—or the Thing-in-Itself—is essentially unknowable was, self-evidently, beyond his powers of thought. He added nothing to the stores of human memory ; he was not a discoverer, because he was not an artist. He petrified the language of science, but gave no new word to the living language of men, since every new word is a discovery, a creation of art. The standing-point from which he confronted the world of realities lacked the ground foundation, namely, the recognition of the function of the senses in the theory of knowledge.

Aristotle was so little of an artist that he is, perhaps, chiefly to blame for the fact that the simple discovery, that all speech is metaphorical, had to be reached by a new way. He observed quite correctly that words are constantly used in a metaphorical sense. But his artistic capacity was so small that he had not

the faintest notion of the all-pervading necessity for metaphor, and therefore surrendered its use to the art of poetry to which he was a stranger, thus excluding metaphor from the sphere of knowledge for thousands of years. So little of an artist was he that he coined without sense and without imagination the new words that he could not dispense with, with the result that in the end his logic was the best that could come out of them.

In brief the truth is this. Aristotle was not an observer of nature, because he had eyes for books only ; for that which, in the petty language of bookworms is called, feebly enough, the Book of Nature, he had no eyes at all. He was the first Bibliophile whose name occurs in the tradition of the history of learning. Plato called him the "Reader," making fun of his book-learning in a manner congenial to Plato's poetical spirit. With the eyes of a bookman Aristotle "the reader" criticised his predecessor's insight. Sound conceptions of the relation of the earth to other heavenly bodies he rejected, principally because the notion of "above" confused him ; the notion of "below" seemed to him to be the more contemptible. The union of two sexes in the blossom of a plant he rejected because plants could not be more perfect than brutes. He was steeped in book-lore down to the depths of his soul. We shall see

directly how his doctrinaire treatment of this book-lore was closely connected with his belief in the reasonableness of creation, and was, therefore, admirably suited for adaptation to the Christian view of the Universe.

Plato's remark admits of a general application. The philosophers of the school of Aristotle were "readers," men with eyes for books only. They thought that they saw what was to be found in Aristotle. What was not to be found there they *saw*, but were determined *not* to see it. It is related of Cremonini, the contemporary and colleague of Galilei, that he refused to go on looking through the newly-invented telescope because the moons of Jupiter, which had just been discovered, had no place in the astronomy of Aristotle. To such an extent were the Aristotelians subservient to the words of their master.*

* I might have known that some of the pictures inserted in this volume would be regarded simply as decorative illustrations.

The geographical and zoological drawings are taken from scientific works which had a wide circulation in the early days of the Printing Press; one is from an atlas in the geography of Ptolemy; another from the zoology of the remarkably meritorious writer, Conrad Gesner; a third from the Natural Philosophy of Megenberg. The prints of imaginary and fabulous creatures and those of erroneous

The great number of his astonishing mistakes would not tell so much against his mental capacity if one maps (one of the latter, in which the African coasts are prolonged eastwards as far as China, thus placing the Indian Ocean in a position analogous to that of the Mediterranean, was unfortunately not accessible while these pages were in the press) are intended to illustrate the unscientific attitude towards nature resultant from the ascendancy of Aristotle as a teacher. The Aristotelian School is not treated unjustly in this collection. I have tried to show with what sort of eyes its teachers looked at nature. Megenberg generally appeals directly to Aristotle as the authority for each of his fabulous animals, Gesner, certainly, in the case of the Unicorn. But even in this instance Aristotle did not omit to furnish proofs where there was nothing to prove and assigns a higher dignity to the single horn on account of its central position in the animal's forehead. The photograph from an antique statue shows how an ancient sculptor represented Aristotle, if, that is, the letters of the inscription do not point to the conclusion that the artist meant to represent Aristides or Aristippus and if the head and the body of the statue belong to each other. How Raphael portrayed the earthly Aristotle beside the more heavenly Plato is made known to us by the central group in the "Schools of Athens." Here I am taking as proven what is in the highest degree probable, that in the "Schools of Athens" (this name is not much more than two hundred years

were able to put down to his account an equal number of instances in which he had hit the mark. But this is precisely what we are unable to do. Besides, it is a matter for serious consideration to what extent some very minute error may, occasionally, invalidate a man's claim to the possession of any scientific thought whatever. When, for example, he says that

old) Aristotle is represented as Trendelenburg and Springer have declared and that Hermann Grimm's defence of the old misconception, that Raphael had here given a portrait of St. Paul, is not to be taken seriously.

Some caricatures also were necessary in order that the reader might see for himself in what manner of form the scholastic philosopher appeared to the imaginative artists of the age of the Reformation. In the fine woodcut of Grien's we see Aristotle as a squire of dames. He is bridled like a saddle horse, a woman is seated on his back. The "motif" is one that often recurs. We find it in a drawing by an anonymous master in the Amsterdam museum. It was in keeping with popular taste, in those times, to turn the intellectual Heroes of antiquity, even the magician Virgil, into heroes of amorous adventure. The insignificant kalendar-drawing of Holbein shows the philosopher of the scholastic theology in nearly the same aspect as that in which Luther saw him as a Prince of Darkness. At the head of the Clergy Aristotle falls headlong into the Abyss.

a drop of wine in a large vessel of water becomes water, such an assertion might be pardoned in any person engaged in business, such as a cook, or a wine merchant, or a physician. But the father of logic and method has no right to let slip such a statement, if he is not to lose his reputation among his contemporaries as a scientific thinker. Aristotle saw—and, considering the imperfect instruments of investigation at men's disposal in his day, saw rightly—that a drop of wine infused in a vessel of water was of no experimental significance ; it had, therefore, no interest for him, and he allows the change of wine into water to be assumed. The chief absurdities of his writings on natural science may be traced back to the childish attempt to prove that throughout nature there exists some such principle of utility, which to him appears of exclusive importance. It is true that this teleological conception of the universe was first upset, for the best thinkers, by Spinoza, and that it still obtains acceptance among the mass of mankind. But we seldom meet with such a striking instance of the constantly blinding effect of such an imaginary utility as in the case of Aristotle. A man of his calibre, naturally, does not stand on the same footing with the charlatan who, for the sake of personal advantage, voluntarily allows himself to be misled. But intellectually he is not much

better when, in dealing with the anatomy of animals, he sees in a false light whatever appears to his credulous simplicity to be of universal usefulness in the animal kingdom.

This eternal search for the point of utility, this notion of the end or of design, brings us, however, at last to the kernel of his fallacies.

I look upon the current derivation of the word "metaphysics" (what comes after physics) as a primeval joke of the learned. Aristotle, at all events, always calls this part of his system "the *First* philosophy"; first not in order of time, but of value. His metaphysic is to him the most important part of his philosophy. Yet, in truth, it is only an initial essay, which calls for apology rather than admiration. The effects of this book (in which the unprejudiced reader, according to Lewes, misses the co-ordination and systematic development of the subject, which one would expect in a modern work) were not small. For centuries it held in check the materialistic theory of the world, which is not the final nor the best stage of knowledge, but is yet one through which we must pass in order to reach at last the ultimate standpoint of a critical philosophy.

In the long run, the metaphysics of Aristotle and the rationalised de-christianised system of divinity, which usurped the name of Christian theology, became fully

amalgamated. Even the eighteenth-century religion of reason takes its stand on the metaphysics of Aristotle. The scoffer Voltaire himself is under its sway, when (always with an exclusive reference to his treatment of morals, and with a touch of superciliousness) he says : " La morale d'Aristote est, comme toutes les autres, fort bonne : car il n'y a pas deux morales. Dieu a mis dans tous les cœurs la connaissance du bien avec quelque inclination pour le mal."

The God of Aristotle and of this theology is not the maker of the world only ; no, he is the worker of the miracle of metaphysics, inasmuch as he is at once first cause of the universe and its final end, at once its substance and its form, its potentiality and its actuality. Aristotle was the first to teach how to play catch-ball with the notion of potentiality. If the potential is actual or active, then certainly the whole scholastic system is acquitted on the charge of senselessness, and all teleology as well has a clear meaning.

Molière makes his Aristotelian ask : " Si la fin nous peut emouvoir par son être réel, ou par son être intentionnel ?" His French expositors treat this as a madcap jest devoid of meaning. This it certainly is not. Molière has nailed to the counter with one short, sharp blow the distinctive puzzleheadedness of the Aristotelian. " Are final causes something actual in

themselves, or do they operate after the manner of human intentions ?”

It was not Aristotle's belief in conceptions alone that was congenial to the Christian view of the world : still more congenial was the way in which he brought natural phenomena under notions of value. The Aristotelian conception of design is a conception of value, and goes very far beyond the natural conception of design which human speech in its anthropomorphic way usually attributes to nature. Aristotle created teleology in its coarsest form, and rather prides himself on having sought for traces of design everywhere. At the same time, he never laid a general foundation for his conception of design, but borrowed it, without examination, from common speech. We certainly owe countless suggestions and beautiful observations to the teleological view of nature : only, in such cases, the notion of design invariably supplies merely a stimulating question and not a satisfactory answer. Aristotle, however, with a childlike confidence already sees the answer in the question. He always sets his mind at rest too soon.

His often repeated assertion that nature does nothing in vain seems to me to contain the pith of his erroneous natural philosophy. Aristotle thinks that he knows something where no other man has any



FROM C. GESNER'S BOOK OF ANIMALS, 1583
The Unicorn

The text (p. 36) is based on Aristotle

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knowledge at all. The assertion only sounds more impressive, but is quite as unverified and unverifiable as the exactly equivalent dictum: that nature always pursues an end. The whole theory is drawn from the notion of design as it is found in current speech. All the monstrosities of later teleology are thus already to be found in Aristotle. Already he has the maxim that nature always makes the best of possibilities, in fact that optimism which Voltaire regarded as ridiculous and Schopenhauer as ruthless. Already he has the contemptible doctrine that plants exist on earth for the sake of the brutes, and the brutes for the sake of men. His whole attitude towards nature is grounded on the arrogant assumption that nature is to be appraised in proportion to the service which it can render to man. That might be merely a commonplace. In thought or speech we never get out of the anthropomorphic groove. Aristotle alone contrives to set up a standard valuation on a still narrower and more restricted scale. He values the brutes in proportion to their resemblance to man. But then the male sex is his sole criterion, and woman appears to him as mutilated man. Then again, as the free-born Greek, he sets up another standard, and the slave appears to him as a slave from birth, made by nature of inferior value. Hence we are not astonished when we meet with "inferior numbers," "inferior

veins," "inferior dimensions"; "before" is superior to "behind"; "above" is superior to "below."

The criterion of value is the weak point of teleology. For the rest, we are to-day about as wise as we were two thousand years ago, and, with an incompetence like that of Aristotle, we term phenomena "accidental" which at the time of their occurrence we are unable to explain in their cause or end. I have, in my "Critique of Language" (III. 504), sought to show why the notion of design, even in our modern natural science, has not yet become obsolete. — "Conformity to law is the latest mythology which man has foisted upon nature. It is the fundamental error of modern natural science that it has turned 'necessity' and 'conformity to law' into interchangeable terms."

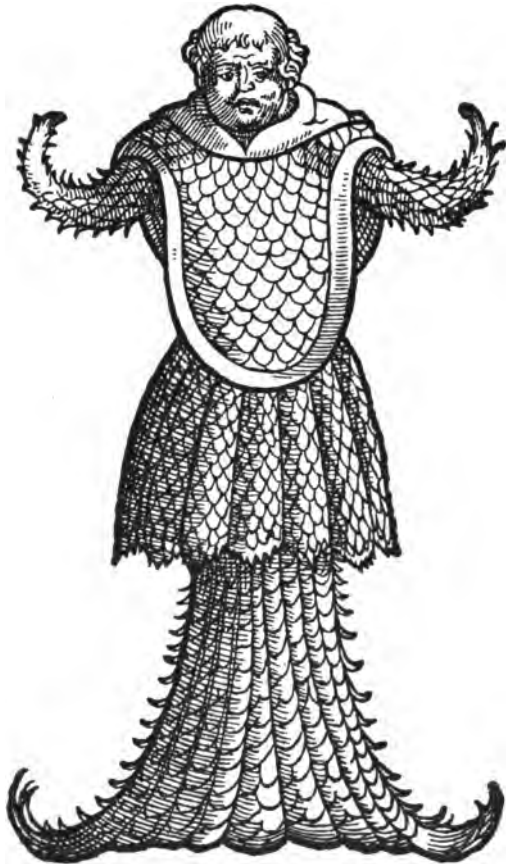
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The criticism of language has at last recognised that the two highways which must lead us to the summits of human knowledge—deduction and induction—are only two paths at the junction of which stand the words or concepts of human speech; in such a way indeed that induction forms the word just as aqueous vapour ascending under the influence of the sun's rays is condensed by them, while deduction analyses the word and concept, just as the mountain spring sends down its waters from above and dis-

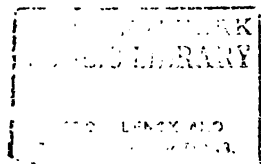
tributes them through the valley below. This distribution of the word, this analysis of the concept, Aristotle has striven to compress within the channels of his syllogistic method. And because he held this method to be the essential factor in the process of thought, and yet at the same time acknowledged that mankind also thought inductively, there was no other course open to him than to reduce, in an unintelligent way, induction, which he had also rightly discovered, to the form of a syllogism. He asserts that the inductive method, which ascends from particulars to generals, descends from generals to particulars. But, at the same time, he completely fails to perceive the psychological antecedents of induction, which with him is certainly not the ripe result of intellectual activity, but a groping about amid accidental analogies, a dilettante attempt at guidance or persuasion by means of illustrations. He never saw clearly the distinction between a genuine induction and the syllogistic formula. Under the name of induction he draws utterly puerile analogical conclusions with all the nonchalance of an ignoramus. And his reason for so doing is that he sees a pervading analogy between the conscious thought of mankind and the unconscious operations of nature. The notion of design, already referred to, misleads him into taking illustrations for

proofs ; for since he is unable to pierce below the surface of nature, in the place of living nature he substitutes his dead logic. If he proves logically in this way that there must be inhabitants of the moon who correspond to the igneous element in that planet, such teaching is not worse than a hundred chimeras of the same sort which are to be met with in the visionaries of the Middle Ages. Only in his case they shock us more, because he is in no sense a visionary, but a common-place self-confident person who thinks that he is only applying his logical method in the most matter-of-fact way. Nietzsche has called him a "bourgeois."

The applied logic of Aristotle consists in the generalisation of examples. He thinks like the Englishman who, because the first person he came across on landing in France happened to be a red-haired, deformed waiter, wrote in his diary, "The French are red-haired and deformed." Not even in mathematics, although there the single example is something more than an example, would such a conclusion be approved ; for the ground of knowledge is seldom or never the ground of reality. In natural science, where perhaps no general ground of knowledge exists, where all explanation can only be description, such inductions are criminal.



FROM C. GESNER'S BOOK OF ANIMALS, 1583
The Sea Monk



If the applied logic of Aristotle startles us to such a degree by reason of the contrast between the scientific claims of his method and his invincible credulity, the principle of his theoretic logic leaves us in hopeless bewilderment. There are decisive instances in which this often acute intellect betrays an amazing obtuseness. This phenomenon may perhaps be accounted for on psychological grounds, if we assume the correctness of a supposition, the better establishment or refutation of which I should like to recommend to the earnest attention of Sanskrit scholars. It appears that ~~Pānini~~, the perfecter of the Indian grammar, and a contemporary of Aristotle, manufactured out of the notional categories of his predecessors a system of formal grammatical categories. The science of etymology as practised among the Indians of Aristotle's time (a science which subsequently in the nineteenth century made good its claim to form a complete branch of Western culture) would have been, with its inquiries into the parts of speech, into the roots and constructive elements of language, impossible had it not been preceded by an accurate analysis of conceptions, what we now, perhaps, call logic. Now it would be quite within the bounds of possibility, and amusing as well, to suppose that Aristotle by some means or other had become acquainted with this

contemporary Indian grammar, which took for granted, without making any more express mention of it, the logical analysis of conceptions, and had, amid mistakes and confusions, again contorted this system of grammar back into a system of logic. On this assumption his logic is founded on a grammar which he did not understand. That his logic is based on an elementary philosophy of language has, as a matter of fact, been rightly perceived. To illustrate, in connection with Indian grammar, the above-mentioned obtuseness of Aristotle, a single example or suggestion will suffice. In the seventh chapter of his *Categories* he uses the word which in the later Western grammars signifies the "cases" of the substantive ; he uses it still in the general sense of an "element of construction" ; but while the contemporary Sanskrit grammarians had already thoroughly investigated the formative elements of words Aristotle adopts what is obviously a technical term without clearly understanding its technical meaning. In instances such as these Aristotle talks nonsense. Just as in natural science he makes astonishing mistakes, because he treats the notions of species and the physical notions of the common speech as if they corresponded exactly with reality, so in precisely the same way, in his *Mechanic of Thought*, he represents the abstract and more abstract

notions wrongly, because he assumes, in good faith, that the accidental analogies of his mother tongue, *i.e.*, the Greek grammar, the categories of the spoken sentence are necessary and generally valid categories of thought. But that he was acquainted with the methodically arranged grammar of an Indo-European language appears to me to be an hypothesis which cannot be rejected. For only thus can it be explained that while, on the one hand, he was unable to differentiate the parts of speech of his own language, he yet, on the other, set up logical categories which in most points correspond to a subtly elaborated grammar. It would be quite in keeping with the speculative tendency of the Greek mind if Aristotle had been acquainted with some such monstrous Indian grammar and had misunderstood it logically and metaphysically from beginning to end and had unconsciously transformed it. Some test instances must be given to illustrate my assumptions, which at first sight are bound to appear mere moonshine to classical philologists.

First of all, there is the phenomenon of the negative in human speech.

On his notion of the negative, Aristotle has constructed the largest portion of his logic, almost his entire teaching concerning judgment and the inference. Moreover, his metaphysics weary us *ad*

nauseam by their ever-recurring opposition between being and not-being. In his presentation the concepts negation, contradiction, and opposition jostle each other in complete confusion. He transfers verbal negation to the world of reality, calls it contradiction, and even out of this nonentity creates his world.

I do not think that the fact propounded can be more clearly expressed. The negative, as expressed by the little word "no" and its correlatives, is a reality, but still only a reality of human speech. In the last resort—as I observe in other places—this negative is the strongest expression of our subjectivity, of our egoism, of our "I." When a child refuses food by a determined shake of the head, he makes use of the most expressive symbol of negation. All negation means essentially: "I will not," or, what comes to exactly the same thing, "I can not." When all is said and done, all negations involve refusals of this sort. If it is suggested to me that I should call something black white, a dish is offered to my intellectual "Ego" which I don't like. I try, for instance, to associate mentally the word "raven" with the notion of "whiteness." My brain neither can nor will admit the association. And just like the child I vigorously shake my head at it.

Aristotle, besides, like many men after him, allows

himself to be deceived, by an accident of language, into thinking that all the differentiations of speech rest upon a real foundation (as if there existed in the highest regions of thought, as the philosophers suppose, a metaphysical popular etymology). In the instance we are speaking of we meet with certain contrasts in speech which are expressed by "no," "not," the prefix "un," and so forth, and others in which we employ positive terms. In my opinion, the decision whether we shall employ one or other kind of negative depends entirely on our own egoistic convenience. The man who is useful to us (that is, in the long run, to our social conditions), and the man who is injurious to us, have both such an important bearing on our well-being, that we use distinctive words, "good" and "bad," to describe the two types of character. We are so sensitive to the impressions of light that we find it fitting to express our sense of their most extreme contrasts by the two words "black" and "white." We do not say unbad or unblack. Since our knowledge of truth is less intimate we have as the negative of "true" "untrue" as well as "false."

Thus it is a matter of chance, that is to say, dependent upon loosely co-ordinated observations whether, in our language, we employ a negative or not to express any relationship which we have experienced as contrast

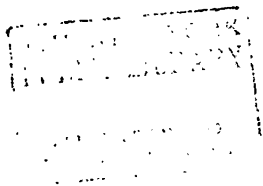
or contradiction. In the outer world of reality, however, no such negative, no such contrariety exists at any time or under any circumstances. If I call some person positively a criminal or negatively a "ne'er-do-well," the same person, in the world of reality, is never, at any time or under any circumstances, the negative of the respectable man, but is, in the most real sense, quite as positive as the latter. "Odd" numbers are not less positive than "even" numbers. Aristotle, on the other hand, treats the negations of language as a form of the phenomena of reality and, in his logic, employs negative judgments, as if the negative corresponded in some way to something in reality.

A lucky instinct (or the discretion of his Indian sources) restrained Aristotle, however, from including the conception of the negative in his ten categories. That was an inconsistency. He had already done so much for the negative that there remained hardly anything more for him to do. He left it to our own Kant to take the last step, in whose highly suspicious table of categories the negative is quite seriously installed in the fifth place. The categories of Aristotle, in short, are the most glaring instance of his servile submission to words, and further, according to my unverified hypothesis, of his dependence on a system of grammar which he did not understand.



FROM C. GESNER'S BOOK OF ANIMALS, 1583

The Sea Bishop
(Episcopus Marinus)



I admit at once that these categories are certainly of great importance for a history of Logic, as well as for an historical criticism of thought or of language, but that, over and above this, they afford a striking example of the force of indolence, of the vitality inherent in the mere sound of words, even after they have long ceased to be associated with a clear and definite meaning. Whoever has any sense of the subtlest humour of the human mind, of the unspontaneous humour of philosophical conceptions, may find occasion, in the history of the notions of the categories, for the freest and heartiest mirth.

Trendelenburg reaches the core of the question when he remarks that Aristotle with his categories intended the parts of speech (or rather had confused the one with the other). Überweg very shrewdly adds that his analysis was that of the parts of the sentence (subject, predicate and so forth) rather than of the parts of speech, and I would make yet another suggestion: that instead of "analysis" we should use the less respectful word "confusion." Let us realise the position once for all: Aristotle found, in his unknown, probably Indian, sources, human language divided into parts of speech. He first of all makes the mistake of mixing up these parts of speech (that is to say the analogies constructed by grammar)

with the analogies constructed by syntax. The confusion is not carried out completely : he had a vague perception, that his first category, that of the "quid," the later so-called "quidditas," stood in the relation of natural subject to all the rest of his categories. But then he made his second mistake : that of projecting these, in any case, merely verbal distinctions into the world of realities, and of attempting to fashion his conception of the world, and that of all who were to follow him, in accordance with them. It was lucky for Aristotle that his sources were at least in the grammar of an Indo-European language ; if, by chance, (for he certainly could have no inkling of the resemblance between Greek and Sanskrit) he had worked on a Chinese grammar the result—from the standpoint of a European brain—would have been such as might have come out of Bedlam.

The psychological origin of the Aristotelian categories has not yet, however, been quite rightly explained, although the substantial facts have been known for long to men of learning I have in mind in this connection Aristotle's innocence of grammatical science. He was still in ignorance of our distribution of the parts of speech. He could not, therefore, as Trendelenburg particularly points out, have changed the parts of speech into metaphysical categories with any

conscious intent. He took this step rather, if the phrase may be forgiven, through sheer stupidity. He mistook analogies of language for the highest ideas in the universe. "Category" even has remained untranslatable because his own notion of its meaning was completely vague. The first category, that of the "quid," wavers obscurely amidst our conceptions: "name," "subject," and "reality." The third category, that of quality, wavers quite as obscurely between "adjective," "specific difference," and "sense-impression." The four last categories grope with still greater uncertainty about the forms of the verb. He seems to try at haphazard to provide special categories for intransitive and transitive verbs, for the active and the passive voice. Special categories for the separate cases of the noun, for the tenses and persons of the verb he does not give—an omission arising more from ignorance than for any better reason.

His doctrine of the categories is the foundation of his logic and of his metaphysic; but it was constructed out of prelogical, pregrammatical thought, only to fall again under the ban of common speech, in spite of all efforts to form clearer conceptions than those which common speech conveyed. The system of categories is prelogical because it falls persistently into the schoolboy's blunder of making hasty

generalisations, because it is satisfied, in countless instances, with correct or incorrect illustrations where proof ought to have been demanded. And this very book which has supplied the terminology for a portentous mass of literature, which has also tempted even Kant to outbid it, was only, after all, an unlucky attempt to convert the common abstractions of current speech into a supposed science of reality. So weak is this attempt that even Kirchmann, with all his reverence for Aristotle, is forced to say that the process of thought is sometimes poor and sometimes superficial, while philological exponents are placed in the dilemma of having to account for the whole as a work of the philosopher's youth or as a popular treatise or even to regard single chapters as forgeries.

This pregrammatical mental attitude of Aristotle seems to me to account sufficiently for the meagreness of his system of categories. We must confine ourselves to him and not consider the later Aristotelian logic. Already among the Romans, who were practically the inventors of our grammar, category had been rendered by "praedicamentum" or "praedicabile"—the hair-splitting difference between these two words concerns us as little as that between "category" and "categorem"—and bore a meaning somewhat similar to that of our predicate. It is plain, however, that in the writings of Aristotle *κατηγορία* is not yet used as a

technical expression, but rather signifies "that which may be said concerning a thing." What *may* be said, be it well understood. I repeat: the whole logic of this period was an introduction to rhetoric: it was taught in order to give the learners proficiency in speaking fully and methodically upon any subject whatsoever. The system of categories in its entirety underlies the "Topics" of Aristotle, a tissue of absurdities which supplied a branch of instruction which philosophy has no longer the effrontery to uphold. This work, which once upon a time had a reputation equal to that of the Logic, belongs to the class of books which undertake to teach the art of poetry in twenty-four hours. It is a talker's manual, a guide to the art of turning out stereotyped phrases on any subject which the speaker chooses. The categories form the most advanced syllabus of this school of talking. Nothing is easier than to keep the tongue in motion when one has learned by heart that one must first posit one's horse and one's journey as a fact and then add in consecutive order the characteristics of quantity and quality, space and time.

It would be superfluous to say anything about these exploded "Topics" of Aristotle, did they not reflect very clearly the general features of ancient thought and its philosophies. Up till now we have seen that Aristotle, in the two fundamental positions of his logic,

the doctrine of the negative and the doctrine of the categories, made the extant forms of speech the objects of a superstitious cult as though they had been actual deities; for he blindly transposed into the world of reality the "No"—that is, our subjective rejection of a proposition—and also honoured as categories, general forms of speech, of which he had no clear understanding, bringing them offerings and, above all, the intellectual offering of his far-famed realism. If any one refuses to agree with me that Aristotle, in the instances cited, in his doctrine of the negative judgment and of the categories, has shown himself to be a confused thinker and has never risen above a sophistical analysis of traditional abstract words, let him as his punishment be condemned to read the "Topics."

If Aristotle had only written this work as a pastime, as purposely intended to teach beginners the first steps in the art of disputation, if he had breathed a different spirit into his metaphysical and logical writings, then we might have supposed that here we had an instance of a great philosopher condescending to compose a manual of practical instruction suited to the needs of his own day. Even Schopenhauer began to write such a treatise on eristics (the art of disputation). But the work of Aristotle was altogether different. It cannot be repeated often enough that Greek philosophy, in many cases, was not much better than rhetoric, the art

of the debating club, the petty chicanery of the law courts. It was an endless strife of words, to which Sokrates alone, among all the rest of the Sophists, gave an entirely new direction. Amid the banter of his conversation there is always to be heard a note of longing to test the meaning of words in their relation to reality. Notwithstanding, Plato and Aristotle again pay homage and allegiance to words. Nowhere is so striking an illustration to be found of the levity of the Greek thinkers, of their satisfaction in the mere fact of excelling in verbal debate, as in the miscellaneous Topics of the great Aristotle. Just as a legal practitioner, without any scruples, aims at nothing except the defeat of the opposite side, no matter what means he employs, so Aristotle, in like manner, in his "Topics" has no larger end in view than to teach one how to get the better of one's opponents and reduce them to silence. Now this ignoble branch of instruction, which was in force for centuries, which the arch-talker Cicero at a later date still assiduously cultivated, has for its two chief implements just those two foundations which we have learned to know as the spurious mainstays of logic—the negative proposition, with its fine-spun distinctions of the contradictory, and the system of the categories.

In their moral bearing only are the "Topics" of Aristotle distinctly inferior to his formal Logic. The

Logic has no greater value as a contribution to our theory of knowledge. Its method of argument is, to our notions, a juggling with words, oriental, Talmudistic, but the Logic, at least, conceives its objective to be truth. That of the "Topics" is, admittedly, the gratification of personal vanity and victory over an adversary. The Greeks were passionate debaters. Aristotle endowed their lust for disputation with an art of dialectic, which he ranks, expressly, along with that of the physician and the orator. Yet he gives no rules of universal validity. No; he merely gives the rules of a game, the game of Greek dialectics. In this pastime the rôles of the propounder and answerer of the question are apportioned like the parts in a play. If the latter replies in a manner out of keeping with his part, the former is entitled to withdraw from the game. The "Topics" are a code of etiquette of the antique duel with words. A code of honour it cannot be called. Aristotle lays down the rules of fence common to both parties alike.

Owing to the incompleteness of his presentation, it is natural that Aristotle should introduce occasionally into the "Topics" further amplifications of the Logic. It is precisely at this point, however, that his conception of the modality of the syllogism, that is, of the degree of the subjectivity of truth, plays him a sorry trick. Where nothing is at stake but the satisfaction of vanity

and an unsubstantial triumph over an opponent, it is a matter of indifference whether subjective probability or objective truth is finally reached. The professional disputant becomes simply a liar and a deceiver. The court of highest instance to which he appeals is public opinion (*see* "Topics," i. 14). Quintilian who, as a professor of literature, lectured on "style" under one of the Roman emperors, had already in a passage of his book turned the Aristotelians into ridicule on account of the pride with which they regarded their schools of debate. We of to-day who are the posthumous scholars of the "Topics," of which the business from beginning to end is only words, have every reason to pass a yet sharper sentence. But—as said before—the "Topics" and the Logic are not unworthy of one another.

One and the self-same spirit dictated both. It cannot be called the Holy Spirit. The day, too, must come when the logic of Aristotle along with the categories will be cast out to follow the "Topics" into deepest oblivion. In his translation of the latter, Kirchmann has already pointed out that this branch of teaching has vanished from the world of scientific thought, despite the circumstance that at the present time the practice of public disputation is carried on to a much greater extent than in ancient times. But the exaggerated terms of respect in which Kirchmann has spoken of the

war of words engaged in by the Reformers and the parliamentary debaters of the present day, has prevented him from perceiving the difference which separates such controversy from that of antiquity. In the sixteenth century the philosophical interest in the knowledge of the universe was wanting, just as it is wanting in the men of our own day. No doubt the Reformers claimed to be the possessors or the investigators of the truth. No doubt the agents for class or local interests who, since 1789, have called themselves the representatives of the people, claim to be the champions of truth; but even the most sincere among them advocate only practical truths, not truths which concern our knowledge of the universe.

For even the Reformers were exclusively occupied with the pre-eminently practical question of regulating the relations between man and God. It was of the highest practical importance whether men were to escape the pincers and glowing cauldrons of the devil by means of indulgence fees, by good works, or by the more economical process of saving faith. The decision depended on the correct interpretation of the word of God. None of these worthies had a doubt as to the divine character of the Bible. From this standpoint, therefore, they were quite justified in refusing to cumber themselves with questions as to its origin. The philosophical and dialectical art of Aristotle was of no

use to them, for they were still only in the position of two greedy litigants wrangling over the meaning of a given deed. The deed itself was not disputed.

Of an equally practical character are the questions over which our Deputies fight to-day, only they are questions—of bread and butter, in fact. If considerations of a universal kind are introduced, they are merely put up for effect, and are seldom meant seriously. But neither a Conservative nor a Liberal could “argue a duck out of the water” by the use of the Aristotelian art of dialectic. The modern point of view has been compressed by our parliamentary system into the cry of “question.” Aristotle’s disputants had no conception that it was possible, or even obligatory, to “speak to the question,” and no Greek or Roman ever interrupted the speech of a disciple of Aristotle with the interpellation of “question.” In the criticism of language this is exactly what is now taking place. For the first time since Locke’s “Essay,” the call of “question” is being addressed to words.

But even when the Reformers and Parliamentarians disputed only for the sake of disputation, only in order to silence opponents, a return to the archaic method of the “Topics” was impossible. More modern treatises of this kind contain conscious rhetoric. The Organon of Aristotle—*i.e.*, the Logic, along with the “Topics” — contains unconscious

rhetoric. The "Topics," in particular, are no longer suited to our palates. Nourishment, which has once been rejected with nausea, can never again be considered in the light of food.

And yet one last trace of this archaic schooling lingers among us. It is certainly to be found in the so-called "Chrie," which forms even to-day, more or less ostensibly, the groundwork of the class-room essay in German schools. I, at any rate, between the ages of sixteen and nineteen, had to compose some such "Chrie" nearly once a month. Each exercise was concocted with imbecile uniformity, according to the rules of chatter laid down in the "Topics." These rules had also the same end in view as the metrical list of questions :

"Quis ? quid ? ubi ? quibus auxiliis ? cur ? quomodo ?
quando ?"

Chatter in conformity to rules is also the object of so-called Homiletics, the rhetoric of the pulpit, in accordance with which the greatest dullard can weld together a methodically ordered discourse.

It was necessary to refer to the "Topics" of Aristotle, because the categories of the Logic, and the "loci" of the "Topics," twist and turn them as you will, indicate one and the same obscure conception. I will show this briefly, and I shall not be to blame if the reader's

respect for Aristotle's depth of thought is not thereby enhanced.

His intention, in the "Topics," is to give directions how to find out what may be said on any given subject of discussion. From the expression "to find out"—unless it had been used by others before him in a technical sense—he may have got the idea of calling the different points of view "places," or τόποι. I call attention to the circumstance that in our language also "point of view" primarily signifies a place; so that the Greek expression is by no means so strange as it seems. Now, if we express somewhat more learnedly the object of Aristotle's "Topics," we may call it a guide to the discovery of the points of view from which this or that may be said or predicated about a subject. But since "category" also simply means a general predication, or general point of view, the definition of the "Topics" results in this absurdity, that they teach how to find out general points of view about general points of view. Any trite phrase, which no longer attracts the least attention, is nowadays termed a commonplace. In Prantl's "History of Logic" I have not met with the history of this expression. But clearly common places, "loci communes," are nothing else than a translation of Aristotle's "τόποι," which again coincide confusedly with his categories. Thus already among the ancients

the categories of Aristotle had become common-places.

The father of logic busied himself as little about sharply defined words as about clearly differentiated grammatical notions. The idol of his worship was the common speech of men.

He was not without a certain purblind perception of this fact ; but he hardly looked upon it as a defect. In his terminology he uses "analytical" in the sense in which we, at the present day, use "logical" ; what he means by "logical" is approximately the same as "rhetorical."

Very attentive readers will here meet me with a weighty objection. In my opinion Aristotle must have tried to draw up his categories on an analogy with the parts of speech without, however, having a clear notion of the latter, whatever may have been the source from which he got their distribution. If, then, Aristotle's scheme of categories is itself mistaken, it may be argued that it should be possible to draw up an *improved* scheme based on an improved science of grammar. But with this view I am in entire disagreement, since I deny *in toto* that the forms of grammar are anything more than accidental analogies of individual languages, and I furthermore assert that the actual world of realities is as little classified according to categories of the mind as the primi-

tive languages were according to categories of grammar.

Aristotle's dependence on the usages of common speech betrays itself in almost every sentence of the *Organon*. This is shown especially by his uncertainty when the number of the categories comes in question. Prantl has made an exhaustive collection of the passages bearing on this point (1 "Anmerk." 356). I pass over the cases in which Aristotle evidently only wishes to refer to the first three categories, and contents himself with a sort of "et cetera." But there are other instances also in which he repeatedly hesitates over the categories of "who" or "what," of quantity and quality, and gropes after an impossible inclusive formula for the remainder. A most important point of view with him, evidently, is the passive form of the verb, and the undefined activity of motion. But he is unable, for example, to recognise in every instance the active meaning of a verb when (as so often in Greek) it has a passive form. Thus, the two statements, "he has consumption," and "he is consumptive," in spite of their identical meaning, he would have brought under two different points of view or categories, since, in the one case, "having," and in the other case "being," is predicated. His teaching on the categories is the "Topics" in a modest form.

In order to give an unprejudiced reader a sample of

the really puerile talk in which Aristotle could indulge I will here quote from the last chapter of his doctrine of the categories, in which he has summed up what he has to say on the category of "having." I need not explain that he is thinking solely and exclusively of the Greek use of the word ἔχειν, "to have." Were I, since Aristotle's whole method of thinking claims to have a permanent authority in all ages and among all people, to translate this passage according to the sense in which it would have been understood by Greeks, it would lend itself to yet wilder absurdity. So that, in using the version of Kirchmann, who has spared no pains to bring a modern meaning into the thing, I am really doing the ancient master of philosophy yet another kindness. In this translation the complete chapter reads as follows :

"Have" is used in different senses, sometimes it means a property or a condition or any other circumstance : for we say, that such an one has a science or a virtue ; sometimes the word is used of size : for example, when any one has a certain magnitude : for then we say of him that he has a magnitude of three or four yards : sometimes the word is used of bodily clothing, *e.g.*, of a mantle or a coat ; sometimes of that which a man has on some part of his person, *e.g.*, of the finger-ring on his hand ; sometimes of a man's members, *e.g.*, the hand and the foot ; sometimes of that which is contained in a vessel ; thus, *e.g.*,

the bushel has the wheat or the jug has the wine; for we say that the jug has (holds) the wine, and the bushel the wheat; we use 'have' for all sorts of things in the same way as in the case of a vessel. Also 'have' is used in respect of property, for we say some one has a house or a field. We also speak of having a wife and say that the wife has a husband. . . . This meaning of 'have' is the most foreign, for by 'having' a wife we understand neither more nor less than to cohabit with her. Perhaps other meanings of 'have' might be pointed out, but the examples cited above give a summary of the meanings most commonly used."

All attempts, even those of Prantl, to give to the categories of Aristotle any deeper significance than a verbal one, must in the course of time cease to make any serious impression. If I were to try and compress my critical remarks on the categories into a small compass, they would amount to this: Aristotle's plan of bringing the most abstract analogies of language into correspondence with the most general analogies of reality broke down, and was bound to break down, lamentably because of his innocence of any theory of knowledge, an innocence which was as entire in the domain of language as it was in that of reality. If we, infinitely better equipped with knowledge in both these directions, attempt to revive the old plan, we reach—in accordance with our several

conceptions of the universe—the same or a still more important result, the conclusion, namely, that the most general conceptions of language do not and cannot correspond to the most general analogies of reality, that Categories of Reality do not exist. After thus considering the foundations of Aristotle's Logic, I ought to restate critically his representation of the doctrine of thought itself. I have endeavoured to discharge this task in my "Critique of Language" when speaking of the Current Logic. For the subsequently codified logic which, to-day, is still treated with general respect is, even in its merely technical features, much more a creation of Aristotle than Prantl is willing to admit. He delights only in turning his master's obscurities into profundities. I feel certain that Aristotle, in accordance with the whole bent of his mind, would have greatly admired his successors for having, as a rule, reached, through their mechanical system, what he had tried to reach by inadequate means.

Aristotle cannot help seeing in mental conceptions the foundations of all thinking. But because he was not in a position to distinguish clearly between language and reality, because he confused, at every step, language, the alleged instrument of knowledge, with reality, the object of knowledge, there befell him exactly what befell Plato. Mental conceptions were to him sometimes logical, sometimes real, or, in customary

phraseology, ontological. Apparently he intended honestly to overthrow the Platonic doctrine of ideas and to deny to mental conceptions any creative faculty. But he always returns to the fairyland of the Platonic theory, and sees again realities in the conceptions of the mind. He is separated by the width of the heavens, from the nominalist teaching. At the same time he hides himself behind transparent words. In mental concepts, he sees the "essential being" or "wesentliche sein" of things, and although the two Greek words for "sein" and "wesen," are if possible still more clearly identical than the German terms, he does not perceive the tautology. If we wish to make the best of the Aristotelian doctrine of mental conceptions, and the whole Logic, we may say that their author left the Greek theory of knowledge cleaner than he found it. The Sophists, as the charwomen of philosophy, had preceded him with a great pretence of scouring the language, and in doing so had made plenty of noise, dirt and lies. The house, as I have said, looked cleaner after Aristotle than it did before; but its poverty was, thereby, made only more apparent.

If in his doctrine of mental conceptions Aristotle is not far removed from the mythological idealism of Plato, in his doctrine of the syllogism the mental conception grows from a real entity into a downright

living organism, which, in contact with other conceptions and especially with that of the middle term, has the power to bring new and kindred beings into the world. If this phantasy contained a grain of truth, then the original Aristotelian doctrine of thought, intertwined, as it is, with the "Topics," would be in every way more valuable than the later logic, built upon Aristotle, as it has slowly developed itself up to the present day. This later logic, with its much more precise and sharply defined formulæ, leads to no fresh knowledge; the conclusion never advances beyond the premisses, the mental conception, as I have shown, never ends in anything except tautology. If the existence of productive mental conceptions possessing the creative faculty could be proved our intellectual possessions would be beautifully enriched. But, as a matter of fact, this assumption of Aristotle is in sorry case. By the aid of formal logic we have indeed got no further than a survey of our knowledge, than so-called "Laws," which actually are nothing more than convenient verbal generalisations of unexplained but more or less correctly described phenomena, which through certain resemblances have impressed themselves in common on our memory. But Aristotle, with his mental conceptions, did not even arrive at such poor "laws" as these. He

has not even the scientific impulse of our investigators and expounders of the laws of nature. He is in the strictest sense of the expression, as used by us, an unscientific thinker. Quite mechanically he is always striving to subordinate his mental conceptions to others of a higher and more general order, so that each branch of his system may culminate in some one sovereign conception or rather proposition. We are still juggling to-day, in all our modern languages, with the words used by Aristotle to describe such first principles, or with bad translations of them. Some of them—maxim for example—have withdrawn themselves into the antiquated sphere of Ethics. Others—such as axiom and hypothesis—were not examined critically on their merits till the nineteenth century. For us there can be no doubt whatsoever, that these ultimate principles are only words or else propositions by means of which we make solemn definitions of highly abstract words, while secretly fitting them into the current language of one or other branch of knowledge. I put it thus: *axioms* are such highly abstract words in the inexplicable value of which the learned and the vulgar alike believe implicitly. *Hypotheses* are similar words, in the value of which the learned only pretend to believe. *Postulates*—which have also taken refuge, with or without shame, in the sphere of Ethics—

are hypotheses in which, properly speaking, no one believes.

* * * * *

In many passages of my "Critique of Language" I have been obliged to declare that the branches of learning which belong especially to this subject, acquire a deceptive importance, from the fact that the cleverness expended upon them is out of all proportion to the abstract thinking capacity of the average man. Etymology on the one hand and logic on the other play such a brilliant and entertaining game with words that inquisitive children and sages are, for a long time, delighted with these variegated fireworks. Before a man sees through the delusiveness of the whole proceeding, before he despairs of the value of such sport as a means of acquiring real knowledge, the poor devil has to die. And thus from age to age the pastime is reverently handed down, until after many generations the tempest breaks, and a mental revolution sets in, which seeks to discriminate clearly between sport and science.

We have an instructive example of the *naïf* manner in which, in classical times, the boundaries between logic, the nominal basis of all philosophy, and childish pastime could be wiped out, in the learned theory of the riddle as propounded by an immediate disciple of Aristotle. Every word-riddle constituted a logical

question or problem which had to be treated exactly like the other problems of the "Topics." Such was the pleasure taken by the ancients in sophistical debates that the setting of problems formed a part of social entertainments. In educated circles it was a favourite amusement to raise questions in this way and to devote all the devices of semi-cultivated talk to their discussion. The setting of riddles also was one of these *jeux de société* or table-games. Among the more intelligent young folk of our educated classes the same sort of pretty game is sometimes played at social gatherings in which some one, by means of questions and answers, restricted always to "yes" or "no," has to find out a hidden word already fixed on. If the young questioner has some command of language and is quick at catching associations of thoughts, he is able, without too much expenditure of time, to guess not only such concrete things as the little pearl on the head of Miss Dora's pin but even abstract qualities, such as the virtue of Lucretia. Our young people think this a capital way of whiling away an hour, and have not the slightest idea that they are thus indulging in logical exercises in the spirit of the school of Aristotle.

It may sound hard to bring down the life work of the most famous philosopher, the pride of two thousand years, to the level of a drawing-room game. But it must be stated in plain language, to what an extent

Aristotle has become a dead letter in the intellectual life of the present day, when the resources, material and intellectual, of an Academy of Sciences are being expended at this hour, in a manner worthy of the Alexandrians, on the study of his philosophy.

Aristotle is dead for us—even for those among us who still stick fast to the historical standpoint, he can no longer be considered living. He really believed that his age had reached the final limit of human development, the final limit in political and social life, in science and art. He beheld with wonder and admiration the glorious extent of human advancement. The philosopher who proposed to give a general explanation of “being” by “becoming,” had no conception of the process of “becoming” in the human mind. For him it was a settled question that man possesses all senses possible for him. He had not the faintest notion that even the human senses are only accidental.

Aristotle is dead for us because he had no sense of personality, that supreme happiness of such mature children of earth as Goethe. It is not only that the Greek knew nothing of the modern conception of the rights of man, that he was the apologist of slavery; no—in art and life his ideal was the normal man subject to vulgar laws of thought. The mediæval nominalists who regarded the individual as the only real entity, and thus unconsciously extolled personality, appealed

no doubt to Aristotle ; but only in the sense in which at that time all the world appealed to him. In contrast with the poetical doctrine of ideas of Plato he was dry and prosaic enough to forfeit all claim to be considered an idealist. But for a consistent nominalism he had not a single qualification. He had no sense of the nobility of personality. In spite of his far-reaching scientific activities he was himself in nowise a philosophic personality. The man of the middle course, the thinker without creative power, the author without convincing force was no philosopher.

Aristotle is dead because he was, more than perhaps any other notable writer in the whole history of Philosophy, superstitiously devoted to words. "The voice of the public, although it consists exclusively of ordinary minds, is for him authoritative and worthy of respect." Therefore even in the investigation of the most difficult questions he prefers to start from the opinion and the speech of the common people. General agreement may be presumed to be an approximation to the truth. Even in his logic, even in his doctrine of categories, although there the whole point was to use a deeper method of inquiry than that supplied by common speech, he is absolutely dependent on the accidents of language, on the accidents of his mother tongue. And perhaps it is owing precisely to this linguistic servility of Aristotle

that the language of science has for such a long time remained under the bondage of his logical terminology. For indeed he has influenced the technical language of philosophy more than any man before or after him. He appears to rule while he himself is subject. His superstitious reverence for words was never out of season.

The still secretly potent influence of Hegel's conception of history and philosophy, and also his word-worship, as shown in his belief in a reason in history, does not allow thrice dead Aristotle to rest in peace. Therefore it is not, perhaps, useless, in speaking of Aristotle, to discard all reverence for the estimation in which he is held in history. The history of great reputations is a portion, and not the smallest portion of the history of human culture. The history of great names is yet to be written—of such names as Homer and Virgil, or later, as Shakespeare and Spinoza. But the history of great reputations, like that of other things, is an outcome of accidental circumstances, and the history of Aristotle's twenty centuries of fame is a history of a series of accidents.

It was a remarkable accident that of all the Greek writings which gave a broad survey of the ancient world in his days, precisely those of Aristotle should have survived. Another accident—using the word always as opposed to the idea of a reason in history—

provided that the decadence of Hellenism, that Alexandrianism and its commentators followed immediately on the footsteps of the teacher of Alexander the Great. Yet another historical accident allowed the supremacy of Western culture to pass into the hands of the Romans who copied almost wholesale from the Greeks, and thus adopted Aristotle also, in his Alexandrian guise, and bequeathed him as the universal lexicon of knowledge to their heirs the newly civilised nations of Europe. Yet another accident brought the verbal distinctions of Aristotle into touch with Christendom, which from lowly beginnings had become a spiritual and political power. Yet another accident placed certain writings of the philosopher in the hands of the Arabs, brought them under revision by Semitic students of nature, and thus by strange and roundabout paths enlisted them in the service of Christian scholasticism. Thus Aristotle became a great philosopher for antiquity, thus for the Middle Ages he became "*summus philosophus*."

Ancient and Christian scholasticism differ in many points. The ancient system was not yet subject to any Catholic or universal Church dogma. Therefore the Renaissance, in its attitude of hostility to the Church, was able to play off antiquity against Christendom, Plato against Aristotle in accordance with the relative estimate of their respective reputations which was

then the vogue. Nowadays the Renaissance has said its last word. We are now so indifferent to the Church that we are hardly any longer antagonistic. Confronted by our trend of knowledge, which through investigations of the theories of knowledge has reached the criticism of language, ancient philosophy and Christian scholasticism blend together in one uniform mass of word-worship. Out of this mass gifted men of genius, pioneers of the new vision of the universe, lift their heads. Among such pioneers Aristotle is not numbered.

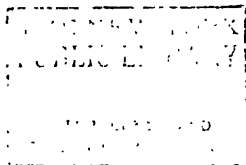
Goethe was very likely of this opinion also, for, in his history of the theory of colour, he speaks with affection of Plato, while, despite his tone of traditional respect, he directs his profound irony on Aristotle, the man of matter of fact. Plato's attitude towards the world is that of a blessed spirit, whose pleasure it is to sojourn here for a while. He explores the depths in order to fill them with his nature, rather than to search through them for knowledge. "Aristotle on the contrary looks on the world with the eyes of a man—of an architect. He is here once for all, and here he must work and create. He makes inquiries about the surface; but with no further object than to secure a site. From that point to the middle of the earth all the rest is indifferent to him."



HANS HOLBEIN D.I. "CHRIST THE TRUE LIGHT," 1527

(The right hand side of the drawing)

The hierarchy follow Aristotle into the abyss, whither he has been preceded by Plato



In still stronger terms has the other great German, Luther, whose Christian zeal safeguarded him against the dogma of classical antiquity, denounced Aristotle. Once he calls him appositely the Prince of Darkness ; and in his splendid letter " To the Christian nobles of the German nation " he utters his opinion without reserve :—

" The universities also have need of reformation root and branch. I must say this, let who will take offence thereat. This then is my counsel. Let the books of Aristotle, Physics, Metaphysics, de Anima, Ethics, which hitherto have been thought the best, be utterly abolished with all others which boast themselves concerning natural things, although nothing is to be learned from them concerning either natural or spiritual things. Besides no one ever yet has understood their meaning and so much precious time and so many precious souls have been burdened with useless toil, study and cost. I dare say that any potter knows more of natural things than is written in these books. It makes my heart ache that this damned, arrogant, rogue of a heathen should seduce and befool so many of the best Christians. God has plagued us with him thus, because of our sins."

And Luther also replies at the same time, by anticipation, to the familiars of the schools, the professional men of learning. " No one need accuse me of talking too much or taunt me with knowing nothing. Dear Friend, I know well what I am saying. Aristotle is

as well known to me as he is to thee and thy fellows. I also have read him and listened to him with more understanding than St. Thomas or Scotus. This I can boast of without arrogance, and can prove it, if needs be. I care not that for so many hundred years so much high intellect has worked upon him. I am no longer troubled by such objections as I may once have been. For it is clear, that more error than this has prevailed for several hundreds of years in the world and the Universities."



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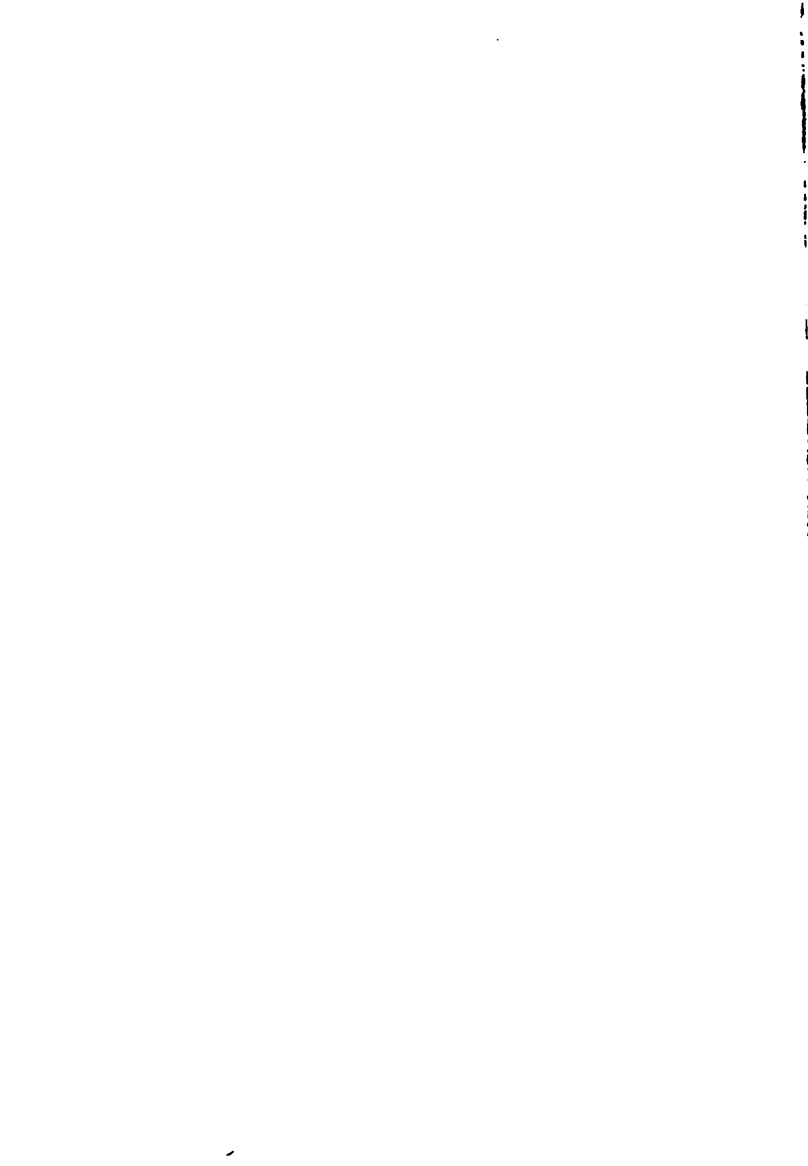
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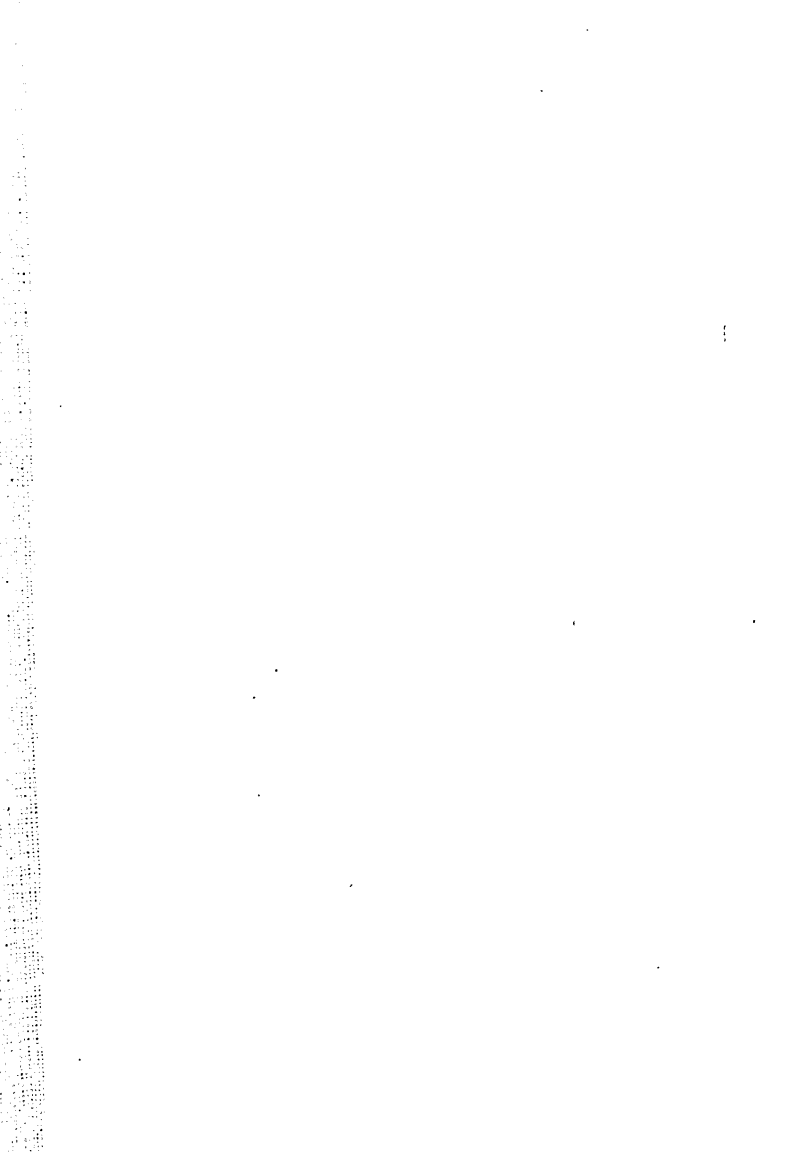
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Goethe. Geschichte der Farbenlehre.



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